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The Journal of the Fire Protection Profession

OCTOBER 1, 1930

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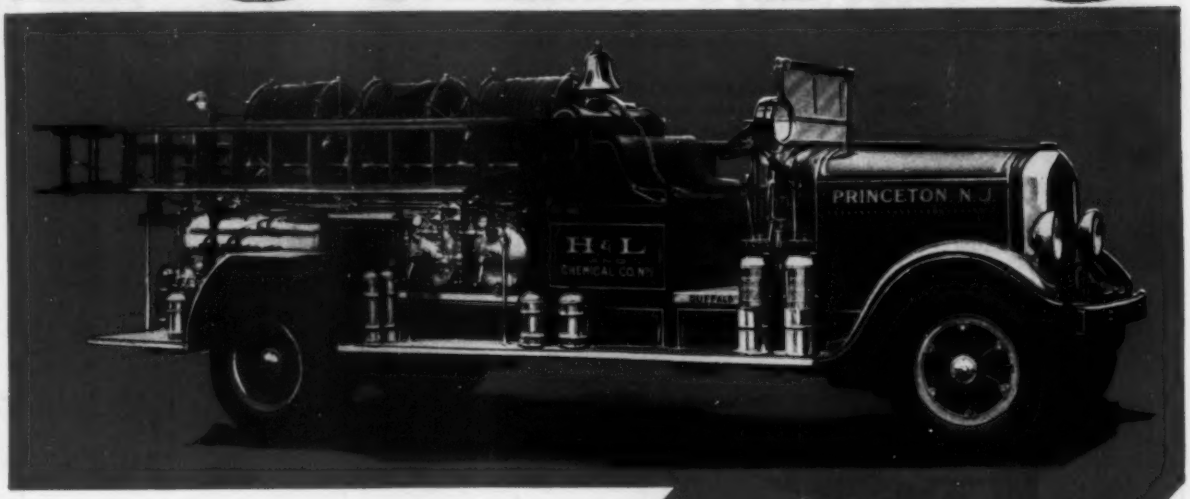

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The Journal of the Fire Protection Profession Since 1877

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

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"A pessimist is a man who won't milk a cow because he is afraid the milk is already sour."

¶ Quite descriptive of many manufacturers these days, wot? And perhaps of many readers who don't write to our advertisers as much as they orter.

¶ However, despite the pessimists, business in the fire protection field is good—and FIRE ENGINEERING isn't complaining a bit!

We are convinced that the way to make business better is to make business better.

The Publishers

CONTENTS

VOL. LXXXIII No. 20

OCTOBER 1, 1930

The Crime of Arson—How Best to Combat It, by E. M. Blanford 843
First a Proper Kind of Law and Then Proper Enforcement of It—Evidence Must Be Preserved.

The Cork Factory—An Explosion Breeder (Illustrated).... 845
Many Materials Employed in Cork Factories Contribute to Dangers of Flash Fires and Explosions—Processes Involved.

Reducing Property Damage by Proper Salvage Methods, by Edward H. Warr..... 847
Best Methods in Carrying Out Work—How Covers Should Be Placed—Proper Tools and Equipment.

The Round Table..... 849
What Precautions Do You Take to Safeguard Places of Public Assembly—Theatres, Lecture Halls, Dance Halls, etc.? What Has Been Your Experience in This Work?

With the Editor..... 851
Comments on Current Events and Live Topics by Our Editorial Staff.

Questions and Answers..... 853
Replies to Questions on All Manners of Subjects on Fire Fighting and Fire Prevention.

Recent Important Fires Specially Reported (Illustrated).... 858
Carpet Factory Destroyed in Paterson, N. J.—Burnings of Two Weeks.

Fire Department Improvements..... 863
Record of Business Activities in the Fire Protection Field.

False Alarms 864
Humorous Side of the Fire Protection Profession.

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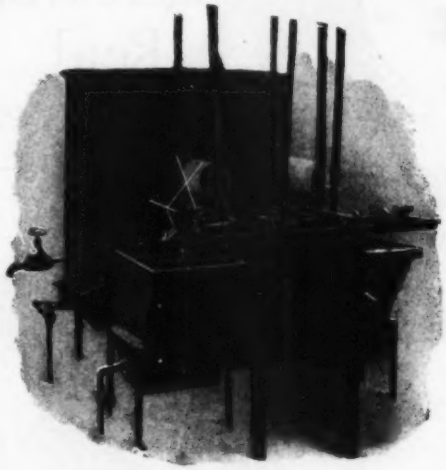

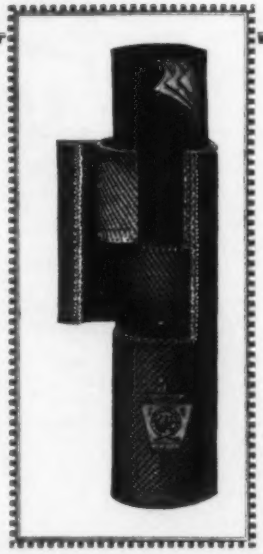

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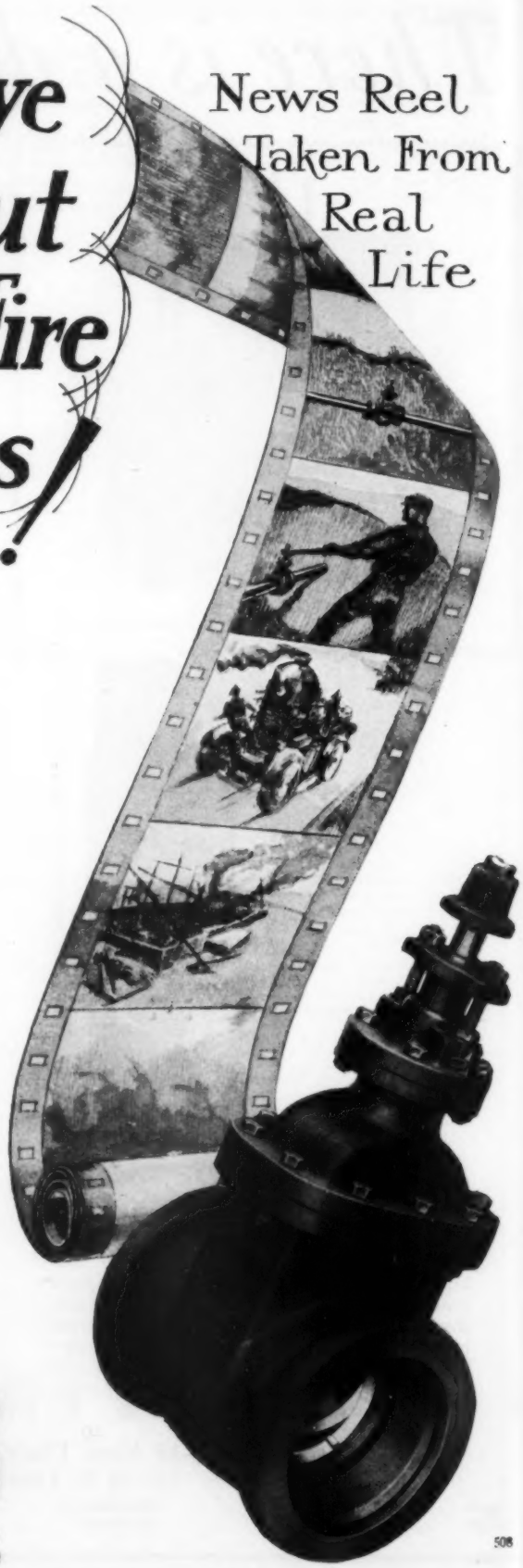

ANOTHER water company had cause to regret the purchase of valves purely on a price basis. Less than a year after they were installed the company had occasion to close one of them and, due to corrosion or some other condition—hard operation was encountered, breaking the valve which was not strong enough to stand the strain. It was then necessary to shut off the water in the line to repair the valve. During this period a fire broke out close by, and the delay in getting the water to the fire gave the fire such a start that a complete loss resulted.

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(A Consolidation of Fire and Water Engineering and The Fire Engineer)

The Journal of the Fire Protection Profession

VOLUME LXXXIII OCTOBER 1, 1930 NUMBER 20

The Crime of Arson—How Best to Combat It

First a Proper Kind of Law and Then Proper Enforcement of It —Investigator Must Know Statute—Evidence Must Be Preserved

By E. M. BLANFORD, Chief Special Agent, Arson Dept., National Board of Fire Underwriters

ARSON and its extirpation is a subject of universal interest, as all Chiefs have this problem to grapple with, and it is a most serious one. The following paper is one of the most important pronouncements on the subject recently published and will be found of great assistance to all interested:

The National Board of Fire Underwriters was organized in 1866 and is an unincorporated, non-profit, voluntary association of stock fire insurance companies, consisting of 254 such companies. The work of the Board is largely of an engineering, statistical, educational and public service nature. It has nothing whatever to do with the actual writing of insurance or the question of rates and commissions or the underwriting policies of its individual members. The Board operates through 13 committees, the members of which are executives of member companies, whose activities are recommended and reviewed by the Board at its annual meeting.

Five of the most important committees, from our point of view, are those on Construction of Buildings; the Actuarial Bureau, in which is incorporated the Loss Information Service; Laws; Fire Prevention and Engineering Standards, including Underwriters' Laboratories; and Incendiarism and Arson. Time will not permit me to dwell in detail upon the various phases of service rendered by the Board, interesting though it may be. The activity of each committee is suggested in a general way by the name. Needless to say, all service is free and to be had for the asking.

Prosecution of the Arsonist Most Important

What we of the Arson Bureau are most vitally concerned with is the investigation of incendiary fires and the prosecution of arsonists. In fact, in any discussion of arson by a representative of the National Board of Fire Underwriters, a prosecution of the criminal is contemplated and is the primary consideration. The reduction or even the elimination of any insurance claim that may be made as a result of the fire is of minor importance. The National Board in its investigation of arson cases is not interested in the question of insurance and it is upon that basis that we solicit the co-operation and support of officials throughout the land and in return tender our assistance. A request for an investigation of a questionable fire made by a public official in the most obscure village, whether the property burned is insured or is uninsured, will be given prompt and careful attention by our corps of trained and experienced Special Agents.

Investigator Should Know the Law

Before a comprehensive and intelligent investigation of any crime can be made, a general working knowledge of the law, under which it is hoped to secure a conviction, must be had. A successful investigator should also have a fair knowledge of what constitutes evidence—what it is necessary to prove to establish a case and what evidence is competent and admissible. He should also be able to present his case to the prosecuting attorney in a clear, concise manner so that that official may have a perfect picture of all the circumstances and the pertinent testimony of the witnesses, and thereby be enabled properly to decide whether or not to prosecute. In mentioning these qualifications, I have in mind not only the Special Agents of the Arson Bureau but those members of the Fire Department and the Police Department who may be assigned to this work, who in some sections of the country are designated as Arson Squads, to which further reference will be made later.

Advantages of the Model Arson Law

For those who are operating in jurisdictions where the Model Arson Law has been enacted, the problem of securing a conviction in an arson case is very much simplified. To those who are not so fortunate as to have had this measure enacted into law in their territory, I feel perfectly safe in saying that they can perform no greater service to their community and to their state than to use their influence in getting it upon the statute books. I am wholly unable to see any reasonable objection to this law that might be advanced by any person interested in the enforcement of law and particularly one, such as this, which has for its object the protection of life and property.

The Model Arson Law, sponsored by the Fire Marshals'

> " 'Fight Fire with Fire' is an old adage. The law is the legal fire, the weapon with which we are to fight the arsonist, which seems to be and which we believe is quite adequate. But the law, like any other weapon, is ineffective so long as it remains upon the shelf. It is the vigorous enforcement of the law that counts, and in this we can be of mutual assistance."

Association of North America, with slight variations to conform to the ideas of local legislators, has been passed in 27 states of the United States. Arson, as previously defined by local statute and as brought to us by evolution from the common law, was an offense against the habitation and, generally speaking, consisted in the wilful and malicious burning of the dwelling or certain other buildings, of another, and was later extended to cover the property of another.

Incendiarism Crime Against Public

The idea that a person should be guilty of arson for the malicious burning of his *own* dwelling or adjacent buildings, or should be guilty of any crime for the fraudulent burning of his other property, seems to have lain dormant for centuries. Feeble efforts have been made in some jurisdictions to correct this situation by the enactment of laws making it an offense to fraudulently burn insured property and to file a false proof of loss. We believe such laws are based upon the wrong theory as an incendiary fire is not merely an offense against an individual, association of individuals, such as an insurance company, or property, but it is a crime against the public. Even when the incendiary fire is confined to the building or property where it is set and the only damage to others is the unjust claim paid by the insurance company, the public suffers and the public pays.

All chiefs know that an insurance company is in business just as is any tradesman or professional man. Its stock in trade is the indemnity which it sells. The price of that commodity is the rate and is based upon various conditions and circumstances, but primarily upon experience. The insurance company acts merely as a distributing agency to spread the accidental or legitimate fire loss over the whole insurance buying public and its charge is based upon that principle. If that loss is increased by artificial or unlawful means, such as the incendiary fire, and if the rate charged does not yield a fair return, it must be increased, and quite obviously the public suffers. But this is merely one side of the case—we might say the lesser of two evils. It is when the incendiary fire gets beyond control that the real damage is done. Dwellings of innocent, underinsured or uninsured persons are burned and they are thereby rendered homeless and often penniless. Factories and other places of employment are destroyed and hundreds of individuals with dependent families may be thrown out of work, and all too often the greater tragedy of death occurs, which in this case is nothing short of murder.

Incendiary Fires Most Destructive

Approximately 20 per cent of all fires are of incendiary origin. Incendiary fires are usually more destructive than accidental fires because they are prepared for and are frequently aided by the distribution of highly inflammable materials. They are usually set at a time when there is the least probability of discovery before the fire has gained headway and at a time when it is most difficult to fight them and when there is the greatest probability of loss of life. Thus it will seem that as between the accidental fire and the incendiary fire the latter presents a far more serious problem as there is a much greater danger of a conflagration with its consequent loss of life and property.

There Are Not Very Many More Left

During a Labor Day parade in Washington, D. C., Barney, Gene and Tom, were taken out of retirement and placed in front of a highly polished steamer. It was a proud day for the horses and a thrilling day for their driver. The horse-drawn fire apparatus is rapidly passing out of the modern picture.

Text of the Model Arson Law

"Fight fire with fire" is an old adage. Thus it became obvious that the arsonist must be fought with legal fire, resulting in the development of the Model Arson law by the Fire Marshals' Association of North America, which reads as follows:

"SECTION 1.—Any person who wilfully and maliciously sets fire to or burns or causes to be burned or who aids, counsels or procures the burning of any dwelling house, or any kitchen, shop, barn, stable or other outhouse that is parcel thereof, or belonging to or adjoining thereto, whether the property of himself or of another, shall be guilty of Arson, and upon conviction thereof, be sentenced to the penitentiary for not less than two nor more than twenty years.

SECTION 2.—Any person who wilfully and maliciously sets fire to or burns or causes to be burned or who aids, counsels or procures the burning of any barn, stable, garage or any building, whether the property of himself, or of another, not a parcel of a dwelling house; or any shop, storehouse, warehouse, factory, mill or other building, whether the property of himself or of another; or any church, meeting house, court house, work house, school, jail or other public building or any public bridge; shall, upon conviction thereof, be sentenced to the penitentiary for not less than one nor more than ten years.

"SECTION 3.—Any person who wilfully and maliciously sets fire to or burns or causes to be burned or who aids, counsels or procures the burning of any barrack, cook, crib, rick or stack of hay, corn, wheat, oats, barley or other grain or vegetable product of any kind; or any field of standing hay or grain of any kind; or any pile of coal, wood or other fuel; or any pile of planks, boards, posts, rails or other lumber; or any street car, railway car, ship, boat or other water craft, automobile or other motor vehicle; or any other personal property not herein specifically named (such property being of the value of twenty-five dollars and the property of another person); shall upon conviction thereof be sentenced to the penitentiary for not less than one nor more than three years.

"SECTION 4.—Any person who wilfully and with intent to injure or defraud the insurer sets fire to or burns or causes to be burned or who aids, counsels or procures the burning of any goods, wares, merchandise or other chattels or personal property of any kind, whether the property of himself or of another, which shall at the time be insured by any person or corporation against loss or damage by fire; shall upon conviction thereof, be sentenced to the penitentiary for not less than one nor more than five years.

"SECTION 5.—Any person who wilfully and maliciously attempts to set fire to or attempts to burn or to aid, counsel or procure the burning of any of the buildings or property mentioned in the foregoing sections, or who commits any act preliminary thereto, or in furtherance thereof shall upon conviction thereof, be sentenced to the penitentiary for not less than one nor more than two years or fined not to exceed one thousand dollars.

"The placing or distributing of any inflammable, explosive or combustible material or substance, or any device in any building or property mentioned in the foregoing sections in an arrangement or preparation with intent to eventually wilfully and maliciously set fire to or burn same, or to procure the setting fire to or burning of same shall, for the purposes of this act constitute an attempt to burn such building or property."

It will be noted that the crime of arson, strictly speaking, as defined in the first section, is limited to the wilful and malicious burning by a person of a dwelling or other building, a parcel thereof or adjacent thereto, whether the property of himself or of another. The principal extension of the law in this section is that it makes a crime the wilful and malicious burning of one's own dwelling or adjoining building, whether owned by himself or another person.

Making Attempt to Burn Constitute a Crime

While the offenses described in sections two, three, four and five are not defined as arson, this is in no way a handicap to prosecution, as the terms of the law are very broad and seem to cover every conceivable form of malicious or fraudulent burning. And further, as will be observed from the last paragraph of section five, it is not necessary under this law that there be an actual burning. The placing of any inflammable, explosive or combustible material or substance, or any device with the intent to wilfully or maliciously set fire to or burn the property in question, is sufficient to constitute the offense of an attempt to burn. This, it seems to me, is the greatest single advantage of the new law as, under the old statutes, even though the most elaborate preparation for an incendiary fire were discovered, it was necessary, to complete the offense, to await some actual burning with the consequent danger of the fire getting beyond control, resulting in the loss of life and property.

So much for the law, the legal fire, the weapon with which we are to fight the arsonist, which seems to be and which we believe is quite adequate. But the law, like any other weapon, is ineffective so long as it remains upon the shelf. It is the vigorous enforcement of the law that counts and in this we can be of mutual assistance.

(*Continued on page* 861)

The Cork Factory—An Explosion Breeder

Many Materials Employed in Cork Factories Contribute to Dangers of Flash Fires and Explosions—Processes Involved

CORK is used in quite a variety of products, such as bottle stoppers, insulation, and floor coverings. In its raw form it is not dangerous, but when passing through fabrication into useful articles it is put into such condition as to frequently create severe explosion hazards.

The modern cork factory includes certain operations which are characteristic of all and these will be briefly outlined here.

In the plant manufacturing cork wood, the waste or scrap parts are received in bale form, sorted and then sent by suction through metal pipes into high speed grinding machines or revolving knives from which it is drawn by suction throughout by metal blower pipes to duct separators on roof. The dust from the process is collected and bagged and then removed from the premises and sold to manufacturers of linoleum. The cleaned, ground cork passes from the dust separators to steam mixers where high melting point binder is added. After the cork is properly mixed it is placed in steam-heated coolers, then the material is brought to iron, air cooled pressure moulds, after which the edges are trimmed.

Bottle corks are produced by pressing the sheets of cork which may vary from one to three inches in thickness, against cylindrical shape die cutters. These cutters make the cylindrical corks which are afterwards trimmed and shaped in machines fitted with circular knives. The machines consist largely of numerous high speed and revolving knife cutters.

Grinding is Dangerous Process

Cork grinding is, without question, the most dangerous operation around the cork plant because of the tremendous quantities of highly explosive dust created. Furthermore the possibility of grit, sand, gravel or other materials, which might strike fire when struck by the rapidly traveling cutter, getting into the machines may result in the necessary spark of ignition needed to explode the mixture of dust and air in the machinery, or in the atmosphere around it. It is this dust which must be given consideration by fire departments in operating at cork plant fires.

Cork dust is of highly dangerous character owing to its extreme fineness and capacity for remaining sus-

Evidence of the Power of Cork Dust Explosions

Several persons were injured in an explosion which wrecked the main plant of the Armstrong Cork Company on the outskirts of Beaver Falls, Pa., two years ago. Note dust collection apparatus on top of building. Also note numerous dust ducts both on top of building and on the second floor at the left.

pended in the air for a long time. It requires but a very small source of ignition to fire a mixture of cork dust in air and as a result it falls in Class 1 of inflammable dusts.

Before discussing the handling of cork fires, the following comments on cork dust explosions, as reported in "Dust Explosions," by Price and Brown, may prove of interest.

"Philadelphia, Pa.—An accumulation of cork dust on some pipes in a dryer caused a flame which ignited the dust and resulted in an explosion in a plant in Philadelphia on Aug. 13th, 1913. The plant was partially destroyed. A second explosion occurred in the same mill on March 27th, 1914, caused by the ignition of the dust by sparks from foreign materials passing through the grinding rolls. This was not as extensive an explosion as the former one, and resulted in only a small loss.

"Baltimore, Md.—An explosion occurred in a cork works in Baltimore, Md., on June 27th, 1917. Overheated cork from an attrition mill was carried through the conveyor into a min where it ignited the dust, causing the explosion.

"Nicetown, Pa.—Seven workmen were seriously injured and a large oilcloth and linoleum plant in Nicetown, Philadelphia, Pa., was nearly destroyed on Feb. 27th, 1918, as the result of a fire and dust explosion. The fire, of unknown origin, was carried through stock to bolting reels on the fourth floor and then through other spouts to screw conveyors where it was discovered. It spread rapidly but was under control when water was turned on a pile of powdered cork in one portion of the plant. As soon as the water struck the cork dust, a cloud was thrown into suspension and a serious explosion resulted.

"Philadelphia, Pa.—A small fire and explosion occurred in a cork factory in Philadelphia, Pa., Feb, 1st. 1919. Friction from a broken belt as it wound around the shaft caused the fire which exploded the dust. The force of the explosion raised the roof."

The above emphasize three points:

First, the facility with which the explosions take place. second, the danger of fire passing through ducts in a cork plant; third, the danger of using fire streams carelessly, in that they may displace dust which, upon mixing with air and igniting, explodes.

Operating on the Fire

Where a fire occurs in a cork factory, particularly one manufacturing floor covering or similar material, certain conditions may be expeted. In the first place, there is apt to be great quantities of finished material on hand which throws off very dense smoke. Quantities of linseed oil are apt to be encountered. The dust explosion hazard is always present. Fire may extend throughout the entire plant by way of ducts, and the dust collecting system may even expedite the spread of fire by carrying burning particles through the dust collecting system.

As usual, ventilation is very necessary at cork plant fires. It is accomplished in the same manner as done in other types of establishments.

Force entrance into building and get lines in operation so as to check the spread of the fire, taking care to direct the lines so that no large amount of dust which may have lodged on rafters, or other points of repose, may be displaced. Delegate an officer, or man, to open electric service switch which will shut down the floor equipment (in the event that the plant is in operation and foremen or other plant officials cannot be located to do this).

If the quantities of exposed cork dust are on hand, sprays rather than solid streams must be employed to prevent unnecessarily disturbing the dust. Sprays will also tend to clear the atmosphere and thus check the possibility of explosion. Furthermore the presence of the water in the atmosphere will retard explosion should such occur.

If cork dust bins are uncovered, and can readily be closed, see that this is done at once. Do not unnecessarily wet down stock of material either raw or finished, unless it is necessary to do so in order to extinguish, or to hold the fire from spreading.

In the event that floors show signs of weakening, and collapse of floor is possible, withdraw men from building so that in the event that floors give way men will not be injured by such collapse nor by dust explosions which might result from dust being thrown into the air.

Work of Forest Service Successful

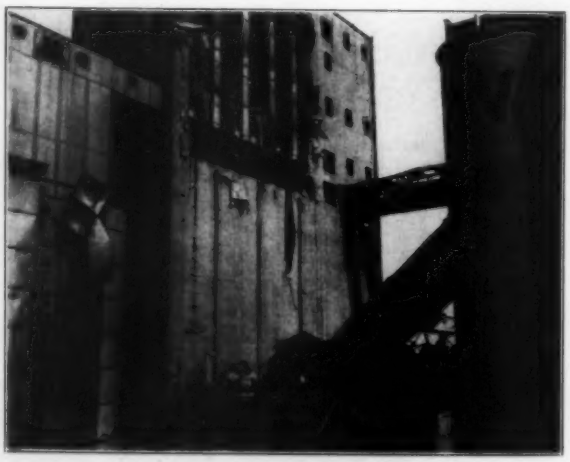
During the past summer the Forest Service of the Department of Agriculture has had considerable success in extinguishing forest fires before they spread over a wide area.

Modern fire-fighting equipment, improved roads and organization are responsible, according to the bureau. Lightning fires put many units to severe tests for several weeks. A total of 1,060 such fires were reported since the first of the year in the northwestern national forests alone.

Greater success in "getting fires young" has characterized this year's operations, preliminary reports show. Comparatively few have burned over large areas and the total acreage swept by fire has been cut down materially.

Protection costs have been about up to the annual average. Expenses from emergency appropriations mounted sharply the last 10 days of August in Montana, Idaho, Washington, and Oregon, averaging close to $7,000 a day in each of the two northwest regions and about half that amount in California.

The cost of the fire suppression increased considerably in the eastern national forests, total control expenses amounting to $13,943 for the 10-day period. Fires in the lake states region increased the control expenses there to about $1,500 a day. In this region approximately 12,800 acres of national forest have been burned over since January 1, it is reported.



Grain Elevator Crashes in Maryland

A dust explosion in a hugh grain elevator of the Western Maryland Railway, Port Covington, Md., blew out a portion of the elevator wall, killed one person and injured twelve others. Fire followed the blast. The photograph shows a general view of the ruins.

Algoma, Wis., Limits Apparatus Runs.—The city council of Algoma, Wis., voted to limit the fire apparatus runs up to the city limits.

Shamokin, Pa., Threatens Strike.—The five fire companies of Shamokin, Pa., threatened to "walk out" unless the Board of Commissioners at once pays each company $600 due for maintenance. For years $3,000 was split up annually among the companies for the general maintenance of their buildings. This year it was stated that the treasury is low and that the city needs the money for other purposes. Firemen purchased their own buildings and apparatus.

Reducing Property Damage By Proper Salvage Methods

Best Methods in Carrying Out Work—How Covers Should Be Placed—Proper Tools and Equipment—Men Should Be Carefully Instructed

By EDWARD H. WARR, Chief, Fire Insurance Salvage Corps, Baltimore, Md.

SOME very practical and valuable suggestions as to the practice of salvage work by fire departments is contained in the following paper, written by an expert in this line of work:

The progressive fire chief of today has come to realize that a large amount of fire waste is actually water loss. No fire company has a truly successful organization unless those actively engaged in fire fighting attempt to improve their loss records by reducing water damage. The essential method to accomplish this end is to spread water-proof salvage covers over the stock in fire buildings and adjacent property; to direct the excessive water to points where it can be readily taken up or drained. Such activities constitute the part a wide-awake fire department should take in salvage operations. A great many such departments have been practicing salvage operations for years, and their work has reached such a stage of development and proficiency that it can truly be called a science.

What Is Salvaging?

Salvaging at fires means the protection of the contents of a building from the effects of water on various stocks, housefurnishings, etc. The three principal characteristics of salvaging are analyzed under the headings of removable, combustible, and damageable.

The element of time enters largely into any fire. The time it takes a fire to spread from one point to another can be utilized by removing articles, which would otherwise be damaged, to some point of safety. This is a natural impulse on the part of the individual, but it is seldom practiced in a systematic way, excepting by well-trained and competent men.

Irrespective of the methods of packing, warehousing and displaying of merchandise, it is usually considered in one of the five classes of combustibility, which are, slow burning or incombustible; moderate burning; free burning; intense burning, and flash burning. Damageable stock is that unable to withstand combustion, heat, falling water and debris, dirt, etc. For purposes of this discussion, stocks can be divided into five classes of damageabiilty, which are, low, medium, high, extra-high, and indefinite, the last applying to a mixed or constantly moving stock.

In order to do effective salvage work, it is essential that stock and merchandise be so arranged and stored that it can be quickly protected; along with some other commonsense precautions that can be easily practiced. A thorough knowledge of these conditions can be obtained through frequent fire prevention inspections.

Cover Valuable Stock

Special attention should be given at fires to the valuable stock, fixtures, appliances and machinery which are in danger of being damaged, such as linotype machines and printing presses; electrical switchboards, motors and such other machinery. These should be immediately covered with salvage covers, as they are very easily damaged by water. When such machinery is found to be damp it should be wiped off and oiled as soon as possible.

In mercantile establishments a great amount of damage can be done to silks, embroideries, linens, cotton goods and the damage to this sort of stock is often very heavy from smoke and water, particularly colored materials; silks become rough and hard to work if thrown around or water soaked and must be protected by salvage covers. Bale and bolt goods must also be given immediate attention. Staple goods, flour, foodstuffs, etc., are easily damaged by smoke and water and should be skidded off the floor and covered. Furniture, furs, hardware, jewelry, fabrics of all kinds, millinery, lace and trimmings, etc., should be given special attention as they are susceptible to damage by fire, smoke and water.

Every chief and fireman should realize that performing salvage work at fires is just as an important part of their duty as extinguishing the fire. Salvage work, when properly and efficiently performed, materially increases the efficiency of a fire department, and will materially aid in decreasing the fire losses.

Knowledge Essential

Every chief should lose no time in learning the scientific and systematic methods of performing salvage operations, and should see that every member of his company or department does likewise. Chiefs and company commanders should bear in mind at all times that the men who are specially trained and detailed to perform salvage work should not be taken from that duty to assist in pulling in lines of hose, tearing down ceilings, overhauling, etc. They should also exercise every effort to eliminate, as much as possible, the unnecessary use of water to extinguish a fire.

In the rural districts it frequently becomes necessary to remove the contents of a building which is in danger of being burned to the ground; this can be very successfully accomplished by spreading a cover or covers on the ground, placing the contents removed from the building on these covers. After everything has been removed from the building, other covers should be spread over the top of the material salvaged, covering every article thoroughly and tucking the end of the covers on the ground up underneath the covers which have been spread over the top of the contents. Finally, carefully guarding the goods until they can be placed back in the building or some other suitable location.

If, in the judgment of the chief or the company commander, it is not necessary to remove the stock and furniture from a burning building, it should be thoroughly covered with salvage covers inside the building, starting first on the floor directly beneath the fire. There are times when circumstances will permit the covering of stock and furniture in the same room where the fire originated; however, when doing this, you must carefully guard against covering any article that may have been touched by fire.

Proper Tools and Equipment

No fire company of today is considered completely equipped for fire service unless it has among its equipment the

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necessary tools to perform salvage operations. These tools consist of at least ten 14 by 18 feet salvage covers, which is rapidly becoming the standard size; a roll of tar paper of the cheapest grade manufactured; one two-bushel bag of sawdust, one life belt and line to be used on steep roofs; one belt and hatchet and nail pouch for each member; brooms; buckets; sponges; scoop-shovels or squeegees. The care of salvage covers should be given the same consideration as that of fire hose, and after having been used at a fire they should be thoroughly scrubbed, cleaned and hung up to dry, after which they should be folded up and placed back into service.

Unauthorized Persons Should Be Kept From Building

It very frequently happens at fires that various persons take advantage of the opportunity to enter the premises for the sole purpose of ransacking and taking whatever valuables that may be in sight, knowing that the blame for the loss of same will be placed on the members of the fire company. To guard against such occurances, no one should be permitted to enter the premises except the firemen while the fire is being extinguished. After the fire is extinguished every effort should be made to locate the rightful occupant or owner and the building and any valuables that may have been found should be turned over to them; keeping out all other persons not having business or authority to enter the premises. There are times, however, when the occupant or owner is out of town, and, to protect the interest of these parties, a reliable and competent man should be left on watch until they, or some other responsible person, assumes charge of the premises, and to guard against anything being removed from the premises illegally.

A great many times while overhauling at a fire, valuables will become mixed with the debris and thrown into the yard or street; on such occasions the men performing salvage operations should thoroughly overhaul this debris and place everything of any value back into the building.

If there is an covering to be done on the inside, an efficient procedure is as follows: Move the contents quickly but carefully to the center of the room and cover with as many salvage covers as may be neecssary; if the contents are extremely valuable, it is wise to double the amount of covers required, to protect them properly against falling ceilings, debris, water, etc. When it becomes necessary to use large streams of water to extinguish the fire it is wise to bag covers on the floor directly beneath the fire.

Store on Parisian Boulevard Destroyed with Great Loss

Two night watchmen are missing, one fireman is believed to have been fatally injured, and four hundred spectators had a narrow escape from injury when one of the most spectacular fires Paris, France, had seen for many years completely destroyed the four-story building occupied by one of the city's largest department stores. The fire started shortly after midnight with a rapidity that few realized. It spread through the building and ate its way into four adjoining structures, which were also gutted. The photograph shows the department store ruins.

How to Bag a Cover

To bag a cover on the floor, the procedure is as follows: Spread the cover on the floor and roll up all the edges, and when properly done, this cover will hold from six inches to a foot of water. There might, however, be only a small amount of water, in which case the cover is spread on the floor and the edges merely turned up and over and when properly done this cover will hold from three to four inches of water. It might be possible to nail the cover under the ceiling. This is done by nailing one edge of the cover to the side wall close to the ceiling and arranging the other end so that the water will run through an open window to the outside of the building. This work of bagging covers has many advantages and it is almost impossible to estimate the value derived from carrying the necessary tools on your apparatus to perform effective salvage operations.

Repairing Hole in a Slant or Peaked Roof

A hole ranging up to six feet square in a slant or peak roof can be temporarily repaired to protect the interior and contents of building against bad weather by first nailing some boards or strips to the joists or studding, making a temporary sheathing job. Then cut off a piece of tar paper a little larger than the hole and stretch it lengthwise across the hole, starting at the eaves. It may be necessary to use more than one piece; if so, use as much as is necessary to cover the hole, lapping each piece at least six inches over the other. When the hole is covered nail strips or lathes around the edges of the tar paper. This makes a very effective temporary repair job. There are times, however, when it becomes necessary to tear half the roof off; in cases of this kind it is necessary to use a cover on the roof, fastening the same over the roof by nailing strips along the edges of the cover, making sure that nails go through the grommets in the cover, always being careful never to drive a nail through the cover paper.

Temporary repairs to windows in dwellings and in a great many mercantile and manufacturing establishments can be made by placing one strip of tar paper over the window and nailing strips across backs of the paper from frame to frame on the inside of building, to keep wind from blowing it loose.

Shafts and Skylights

As to elevator shafts, a rough railing made of old boards or anything that can be had at the time can be placed around the opening. The same also applies when an entire skylight has been torn away, in which case the rail is set around the hole and a cover spread over the same. When there are small holes in a skylight, a piece of tar paper will do the job very nicely.

In cases where the stairway leading from the upper to the lower floors has been burned away, these openings should be protected by nailing boards across the entrance to them. As a rule the first floor doors are rarely ever burned away completely, but they are often torn from their hinges; in such cases the doors should be placed back into position and supported with boards nailed across the back of the door, from frame to frame on the inside of the building.

Small holes in the floor can be protected by moving a piece of furniture over them; if it is possible, however, a board should be nailed over the hole. In cases where the hole cannot be covered, a light should be left burning near it and all persons entering should be warned of the danger by the man left on watch.

Clean Up Work

After the fire has been extinguished it becomes necessary to show how effectively your salvage operations have been performed; every effort should be made to clean up the premises and leave them in as good a condition as the circumstances will permit. First sweep all fallen lath, plaster and other debris into a pile and remove them from the premises in anything that may be handy, such as boxes, cans, etc. After all the water and debris has been removed from the floors, saw-dust should be spread all over them,

(*Continued on page* 868)

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

FIRE is always a serious matter but the hazard that may result is greatly magnified in a room or building in which persons congregate for a lecture or some form of entertainment. Catastrophes such as one that destroyed a small motion picture theatre in Montreal, and another at which many lives were lost in Limerick, Ireland, occur at too frequent intervals.

The property damage at such fires is not as important as the large number of lives lost and the personal injury that always results when a crowd stampedes for an exit.

Frequent and rigid inspections plus a fire department detail have been found effective in reducing the number of such catastrophes. Firemen are assigned to see that wide aisles are formed and that corridors are kept clear for easy egress. They are assigned to dance halls to see that smoking is limited to certain portions of the building. On many occasions these firemen have discovered a blaze in its incipient stage.

In the box on this page is the problem that is discussed in this issue. In the box on the following page is the question that will be treated in the next issue. Should you have some comment that you would like to make on the next problem or if you have one that you would like to see discussed, write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th St., New York, N. Y.

HERE IS THE PROBLEM

What precautions do you take to safeguard places of public assembly — theatres, lecture halls, dance halls, etc.?

What has been your experience in this work?

Discussion of the Question

Chiefs realize the importance of frequent inspection and of public assembly detail. The replies to this question follow:

Geo. Haggerty, Chief, Berkeley, Calif.: A continual inspection of all classes of buildings is carried on in our city by district inspectors. Theatres are also visited by the officer in charge of the Bureau (unannounced) for the purpose of checking exit signs, extinguishing appliances, etc., and the manner in which operators in the projection booth operate their machines, also to check up on any carelessness in handling of films.

On special occasions details of firemen are assigned to theatres, churches, assembly halls and all other places when it is believed necessary by the fire department. Waste material must be removed from such types of buildings immediately.

We find that the management is only too glad to cooperate with us in an endeavor to prevent fire and is very willing to carry out any orders issued by the inspector.

Fire prevention is principally a matter of education and we believe that when a person is approached in a proper manner and given to understand that it is for their own protection that these inspections are made, there is seldom any trouble in having them carry out your suggestions.

A. McC. Marsh, Chief, Columbia, S. C.: The first thing we do is to try and get the public buildings as near fireproof as possible, also to have plenty of exits put in the buildings and see that exit lights are properly installed over places of egress and clearly marked "exit." We see that fire extinguishers are kept in halls in theatres. Dance hall managers are required to keep inflammable decorations out of the reach of the public. We do not allow smoking in either dance halls or theatres.

In theatres we insist that aisles be unobstructed. The same rule applies to lecture halls. Uniformed firemen are detailed to these places to see that the fire department rules are carried out. We have found it helpful to have the fire chief or some other official of the fire department take a few minutes' time in theatres and other places of public assembly to instruct the public as to what to do in case of fire. Their attention is called to the different exits. Ushers of theatres are given fire drills three times a week in order to keep them informed as to how to handle a crowd in the event that a fire breaks out.

We have found that our talks to children have accomplished more than those to adults. State laws require that schools devote two hours a month to fire prevention work. At such times the fire department is called upon to give demonstrations or lectures on fire prevention. Often the school teachers have playlets or have some child in the class present an essay on panics in theatres and lecture halls.

Richard L. Smith, Chief, Pittsburgh, Pa.: Regular periodic inspections are made by our uniformed men and fire prevention inspectors. These men are careful to see that all provisions of ordinances governing fires are enforced. Inspections are also made by patrol inspectors of the Building Inspection Bureau.

In larger theatres the ushers and other employees are drilled by the Battalion Chief with the view in mind to prevent panic conditions in case of accident or fire and for quick and efficient ways of emptying theatres of their patrons.

Talks and demonstrations both on fire prevention and in the use of the necessary auxiliary equipment installed in case of fire are also given periodically to theatre employees, stressing the point of quick and quiet action in case of trouble. Most of all the larger theatres employ retired police and firemen, which makes this work easier.

The above applies to lecture halls, dance halls and any place where a large attendance is expected, particularly of minors. Uniformed firemen are detailed to these places or on the request of persons holding same.

Permits must be secured yearly by dance halls and theatres, in addition to individual permits granted each organization holding dances. Permits are revocable at will of the Department of Public Safety for any violation of ordinances governing them.

Our experience in the past has been that due to the foregoing inspections, details made, training or drilling of the many employees, we have had, to date, very little serious trouble or loss of life at the above named risks.

Jos. L. Murphy, Chief, Kingston, N. Y.: Places of public

assembly are covered by firemen known as "theatre detail." The duties of these men are to see that all exits are kept open, properly lighted, and free from obstruction. Aisles must be clear. Inspections are made of projection booths, automatic fuse links holding slides open in the booths, and of stored films. Asbestos curtains must be provided and the ventilators over the stage door must be in perfect working order. A general check-up is made of fire extinguishers, standpipes and hose. Overcrowding is never permitted.

My orders issued in regard to violations, etcetera, have always been backed up by the State Industrial Commission. I have always received their wholehearted co-operation. For instance, through the Commission I have been able to close three theatres that did not come up to the requirements of the state code. In their places, one modern type theatre has been erected, and the other two reconstructed.

M. J. Fleming, Fire Marshal, New Haven, Conn.: We have an ordinance governing the inspection of theatres, moving picture houses, public halls and other places of public assembly. Licenses are required to operate any of these places.

Inspections are made to see that establishments meet the requirements as to structural conditions, facilities for egress, heating apparatus, water supply, lighting apparatus, condition of fire apparatus, sprinklers, fire resisting curtain, the prevention of neighborhood hazards, general condition of stage, appliances and apparatus, character or mode of operation, and so forth.

In addition to the inspections made by the building inspector and fire marshal, inspections are made daily, as far as possible, by a deputy fire marshal. Also, an inspection is made on or before the tenth of every month and a list compiled and approved of all places inspected. This list is sent to the office of the chief of the police who has charge of the handling of permits.

Since our ordinance has been in effect for the past seven years we have obtained the best results relative to public safety.

Perrin Trowbridge, Chief, Redlands, Calif.: Our building code requirements are for adequate exits, asbestos curtains, sprinkler systems, automatic stage vents, interior standpipes and hose lines, while our fire ordinance requires the installation of fire axes, pike poles and hand extinguishers in all theatres, auditoriums, lecture halls, and so forth, in accordance with the size of the stage, seating capacity and the occupancy group under which the building comes. Asbestos curtains are run down at the close of every performance and remain down until the beginning of the next. Aisles and and exits inside and outside are kept clear and firemen are detailed to theatre duty whenever capacity crowds are expected. Monthly drills or talks are given to the theatre employees on what to do in case of fire or other emergency.

We have never had any trouble with the larger theatres but have found that directors of amateur performances given in school auditoriums are apt to be a little careless.

Chas. E. Tovee, Chief, Chico, Calif.: During the past fourteen years I have had experience with six theatre fires. Three were caused by the exploding of films in the projection booth due to the sticking of the automatic shutter. The fires spread through the ceiling, floors and partitions. The booths were small frame constructions covered with iron. We now insist on fireproof booths, such as concrete, etc., with at least six-inch air space all around.

The other three fires were furnace room fires, caused by leaks from gravity feed oil tanks to the burners. The fittings leaked and the oil seeped into burners. We now insist on pump feed to burners, top of the tank to be buried at least twelve inches below level of the burner.

J. C. Sullivan, Chief, Lowell, Mass.: Places of public assembly, such as theatres, lecture halls, dance halls, etc., come directly under the supervision of the state police in Massachusetts. However, as chief of the fire department, I have our inspectors go through these buildings every few days to see that there are no existing fire hazards. My experience in such work has been during my thirty-eight years in the fire department, filling all positions from fireman to chief. As deputy chief I had charge of the inspections of all such buildings, both public and private, thereby obtaining a great amount of experience. Inspections of buildings are a great benefit to the city in saving life and property from being destroyed by fire.

T. B. Young, Chief, Ridgeway, Pa.: Uniformed firemen inspect theatres, etcetera, to see that aisles are unobstructed and that exits are opened and properly lighted. Smoking is not permitted either in the auditorium or in back of the stage.

We have always found people ready to obey any instructions given by a uniformed fireman.

Thos. F. Burns, Chief, Bridgeport, Conn.: All theatres, lecture halls or dance halls, are inspected every week and a report is made to the office of the chief. A man from the Fire Prevention Bureau is stationed in theatres and public halls on Saturday, Sunday and holidays.

We have had very good results from these weekly inspections. They prevent hazardous conditions in public assemblies and keep exits and aisles clear of obstructions. By having men stationed in theatres, etcetera, the careless use of matches, cigarettes and other inflammables is prevented.

W. G. Lutkey, Chief, Oakland, Calif.: All places of assembly must be in buildings of fire resistive construction, the "class" depending upon the height of the building. Adequate means of egress are required. Standard fire resistive projection rooms with standard fire extinguishing appliances are necessary. A permit must be secured from the Bureau of Fire Prevention to show pictures. All combustible decorations must be fireproof. Buildings over two stories in height must have fire escapes, and wet and dry fire lines.

Inspection work has been under the jurisdiction of the Building Department and the Fire Prevention Bureau since the Bureau was established in 1922. Previous to that time the work was handled by the fire chief and the chief of the Building Department. We have experienced no trouble in enforcing the provisions of the ordinances covering these buildings and no disastrous fire or accidents have occurred.

Wm. H. Hayward, Chief, Scotia, N. Y.: The only place of public assembly that is open daily in our village is the moving picture theatre. The exits and aisles of this building are inspected by firemen on surprise visits. When public dances are held, a uniformed fireman is sent to the place and the department supplies extra fire extinguishers during the hours that the affair is in progress.

Jethro Gibbs, Chief, Montclair, N. J.: We require all exits to be kept unobstructed, and doors must work outward. Fire fighting equipment such as extinguishers, standpipes, automatic sprinklers, etc., are necessary.

Regular inspections are made by members of the department to see that no hazards exist. Employees are given fire drills. When there is to be a public assembly in any hall, the department is notified and the building is inspected before the meeting. No smoking is allowed in buildings of public assembly. In theatres the curtain must be asbestos and a diagram of the theatre must be flashed on the screen at every performance to keep the people acquainted with the layout.

(*Continued on page* 867)

HERE IS THE PROBLEM FOR THE NEXT ISSUE

Is it a good plan to run apparatus motors in fire houses as a test that the apparatus is in proper operating condition?

How often do you believe that the engines should be so operated?

What has been your experience in this field?

With the Editor

The Chief and Fire Prevention Week

The observance of Fire Prevention Week—October 6 to 11—calls for a large amount of participation by the fire department. In fact the fire forces of the city must of necessity be the principal actors in any form of propaganda looking toward the proper direction of the people's thoughts during that time. It is therefore, largely within the province of the Chief to take a directing part in these observances and to see to it that they are of such a nature as to stress the most important features in the city's need along the line of fire prevention.

There can be no doubt that he is the one best qualified to decide this most important matter, on which will hang the success or failure of the work to be accomplished during that week. He is the expert on the subject both of prevention of fire and its control and extinguishment. On him rests the responsibility of the safety of the city and its inhabitants from fire. He has given up his life to a study of fire prevention and its kindred subjects and to him, therefore, must the city turn for its information as to the proper means to be taken to guard it against the perils of conflagration.

He should not hesitate to call to his aid any agencies which can in his judgment, be of assistance to him. There is little doubt but that he will receive full cooperation from all of the citizens, from the civic organizations, from the schools, and all other sources which are deeply interested in the safety of their city. He has only to ask this cooperation to receive it wholeheartedly.

The fire department, itself, can of course, do much to spread the doctrine of fire carefulness. By placarded apparatus, by drills, and many other means they can drive home the lessons to the people during Fire Prevention Week.

The Problem of Blocked Fire Escapes

One of the most important developments of a recent drive in New York City against violation of the fire laws made by tenement house inspectors was the bad conditions found as regards obstruction on fire escapes, especially in the poorer quarters of the metropolis. In these cases, the inspectors found the fire escapes in various conditions of impassability, owing to their being used as storage places for all manner of articles and the depository for rubbish of all kinds. An interesting phase of the obstruction violations was also brought to light. This was the fact that the formerly prized piano has now become a fire menace! This peculiar result arises from the general adoption of the radio as a substitute and the consequent discarding of the piano as a means of diversion and pleasure. As the second hand instrument becomes a "drug on the market," and it is impossible to dispose of it, the owner of it, on vacating the premises, leaves it in the empty flat. The new tenant, owning a radio and having no use for the discarded piano, pushes it into the public hallway, and there it stays, blocking the exists and becoming a serious fire menace.

In other cities the same problems are always coming to the fore. Where there is a fire escape there is always the temptation to use it as a place for storage and for the convenient placing of articles of food, flowers, and so on. When the inspector comes along these things disappear, only to be placed again on the platforms when his back is turned. Education is probably the best means of preventing this form of violation. The citizens must have it brought forcibly home to them that laws looking to the prevention of obstructions on the fire escapes are made for their safety and not with the idea of annoying them, as many seem to think. The purpose of the fire escape should be emphasized, and it should be shown that when the platforms are filled with all manner of articles that this purpose is defeated, and the fire escape becomes a menace rather than an assistance in time of fire. Fire department inspectors can do much in helping this form of education, and the public schools are also an excellent field in which to emphasize proper use of the fire escape. This is good Fire Prevention Week propaganda.

Traveling Weather Bureaus and Forest Fires

In California a plan has been inaugurated by the United States Forest Service and the State Forest Service in cooperation, by which a traveling weather bureau, consisting of a truck manned by two men, one a meteorologist and the other a radio operator and weather observer, travels through the forest areas, attends all fires, and visits sections that may be menaced by forest fires. The object of this is to notify all foresters of weather conditions which may be conducive to the starting of fires, and when such are being fought, to let the men so engaged know of impending storms that may assist in controlling and extinguishing the blaze.

This service is in addition to the forecasts issued daily by radio from San Francisco, giving information to forest rangers of general climatic conditions and special weather reports, so that they may keep in touch with dangers from fire arising from electric storms, extreme dryness, and so on.

This service has, undoubtedly, done much toward preserving the forests of this section of the country from fire loss. The heavy toll throughout the land which such fires have levied upon forests, owing to the gen-

eral drought and dryness of the year, has been enormous, and systematic efforts such as these are extremely valuable in preserving the priceless timber land, which, through careless cutting, fires, extension of inhabited areas, and many other causes is year by year diminishing.

No doubt, as time goes on, such systems will be extended to other heavily forested sections of the country. In some of them, now, a similar protective system is in vogue. The sooner it is extended to all forested areas the better.

Chief Kenlon Returns from Ireland

John Kenlon, head of the New York Fire Department, returned on the Baltic after a two months' rest in Ireland. The boat on which he returned to New York was greeted by two spouting fireboats as a sign of welcome for the chief.

Chief John Kenlon

He was greeted by Dr. Harry Archer, Acting Chief of Department John J. McElligott, and a number of other fire department officers.

Chief Kenlon said that he was sorry to hear about the retirement of Chief "Smoky Joe" Martin. He remarked, "Too bad, that's too bad. I'm sorry to hear that. Great old fellow, Joe Martin."

When asked about rumors concerning his retirement he replied:

"My retirement depends on my health. Today I feel fine, but regardless of looks, I fully realize that I am getting older all the time."

Chief Sullivan Marks Anniversary

On September 3, Chief Joseph N. Sullivan rounded out twenty-three years' service in the Utica, N. Y., department. In 1915 he was made lieutenant and two years afterward was promoted to captain. Following the death of Chief Frank P. Breitenberg, Jr., he was made Chief of the department.

CORRESPONDENCE

Operator Delays Alarm

To the Editor:

Your symposiums on fire questions seem to me one of the most interesting and important features in FIRE ENGINEERING. Here is an incident that occurred.

The farmers of a community raised the money to purchase a rural fire truck, which was installed in the county seat town and manned and maintained by the town.

A farmer subscriber to the fund discovered his barn on fire and ran to telephone for the fire apparatus. His call had to go through a little local exchange before reaching the county seat exchange, and the line was busy. He asked the operator to put through the call, and he hurried back to try and save his property.

After three-quarters of an hour the apparatus had not arrived, and a neighbor drove to another telephone, a direct line with the county seat, and put through the call. The apparatus arrived in eight or nine minutes, but on account of the long delay, the property was completely destroyed.

Investigation showed that the telephone operator had not put through the call and claimed that she had no right to do so because a fire alarm call required a guarantee of the cost of making the run, and she apparently was prohibited by rules from taking such responsibility.

This is a very vital question in our rural communities, because in the first place there is more interest in rural fire apparatus today than there has ever been before. Leaders in many communities are talking about organizing for the purchase of such equipment, but one incident like this naturally spreads around and offers a good deal of discouragement.

The success of rural apparatus will depend on the ability to get the call through, sometimes on telephone lines where it would be necessary to interrupt other connections in order to give the alarm.

We are going to undertake to study into this question, and I would be glad to have the benefit of your information or experience.

Very truly yours,
ARTHUR C. PAGE,
Commercial Editor, *The Prairie Farmer.*

Dr. Harry Archer Declines Re-Election

Dr. Carl H. Schulte, Surgeon, Detroit Fire Department, was elected President of the National Association of Police and Fire Surgeons and Medical Directors of Civil Service Commissions of the United States at the ninth annual convention held in the Hotel New Yorker, New York City, September 25, 26 and 27. Dr. Schulte succeeds Dr. Harry M. Archer, Honorary Medical Officer, F.D.N.Y., who declined re-election although re-nominated by acclaim. Dr. Schulte will be remembered by readers of FIRE ENGINEERING as the author of the article on the hazards of the sliding pole in fire engine houses.

Dr. John P. O'Connell, of the Chicago Civil Service Commission, was elected Vice-President to succeed Dr. Schulte. Dr. John J. White, of the New York Fire Department, was re-elected Treasurer and Dr. Arthur Wildman, of the New York Municipal Civil Service Commission, was re-elected Secretary. Dr. O'Connell's place at the head of the Board of Governors was filled by automatically moving up Dr. Hubley R. Owen, Chief Surgeon of the Philadelphia Department of Public Safety, and Dr. Owen's place on the board was filled by electing Dr. Daniel J. Donovan, Chief Surgeon of the New York Police Department. The other two directors remain; they are: Dr. Wallace Dodge, Los Angeles, Cal., and Dr. Glenn W. Stockwell, Chief Surgeon, Detroit Fire Department. The delegates selected Chicago for the 1931 convention, on the invitation of Dr. O'Connell and Dr. Harry P. Sullivan, of the Chicago Fire Department.

WM. JEROME DALY.

Wheeling Exhibits at State Fair

Chief E. A. McGranahan of Wheeling, W. Va., is credited with having one of the most outstanding exhibits at the Golden Jubilee State Fair held in Wheeling.

In the booth, the fire department demonstrated the Gamewell fire and police alarm systems. Chief McGranahan was assisted by H. A. Friede, city electrician of Wheeling. For the greater part of two weeks these two men explained the workings of the fire alarm system to the many visitors at the fair. There were also uniformed firemen to assist with the demonstration. Another item of interest at the exhibit

The Wheeling Fire Department Demonstration Booth

The man in uniform is Chief E. A. McGranahan of the Wheeling Fire Department and the other is H. A. Friede, city electrician.

was a steamer built in 1896 that served the city from that date until the department was motorized several years ago.

Many favorable comments were made upon the Chief's novel idea to educate the public in fire alarm matters.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Ladder Data

To the Editor:

I wrote a manufacturer recently in connection with information on ladders and he suggested that I communicate with you regarding the information I desire. Will you please answer the following questions on how to properly use following ladders?

What is the proper way to place a single trussed ladder against a building? One side of the ladder is straight and the opposite side bowed. We have been taught to place the bow side toward the building.

How many men can be placed in the following ladders:

20 foot trussed wall ladder
25 foot trussed wall ladder
30 foot trussed wall ladder
35 foot trussed wall ladder
50 foot extension ladder with stay poles.

We have been taught to place no more than two men on any size ladder except an aerial ladder. An aerial ladder, we have been told, is strong enough to place a man on every rung if you wish to do so.

F. H. W.

Answer: As a general rule, the trusted or curved side of the ladder should be placed toward the building. Some manufacturers build the ladders with projecting bolts on the curved or trussed side indicating that this side is not intended for climbing, for the projected bolts would interfere seriously with the operations of the men. Some ladders are built with both sides identical, both curved, and in this case either side might be climbed.

With regard to the number of men on ladders:

Ordinarily only one man is permitted on 10, 12 and 16 ft. ladders.

On 18, 20, 25 and 30 foot ladders two men are permitted.

On ladders over 30 feet in length, three men are permitted.

On roof ladders, on pitched roofs, three men are usually allowed.

Some departments permit 4 men on 45 and 50 foot ground extension ladders, and 5 men on 55 and 65 foot ground extension ladders. On aerial ladders it is not good policy to permit more than 5 men, particularly where lines are in operation, although this rule is ofttimes violated.

Chemical Streams Vs. Water

To the Editor:

Will you please state the difference between clear water and soda and acid chemical solution insofar as their value in extinguishing fires is concerned? Would like laboratory tests, if possible.

M. H. J.

Answer: The following comments upon this topic which appeared in the December 10, 1926, issue of FIRE ENGINEERING answer your question.

This subject has been discussed from time to time in the columns of this journal. Except in confined spaces, chemical streams have no appreciable advantage over water streams of the same size. Streams from soda and acid chemical extinguishers carry with them a volume of gas about equal to the volume of water discharged. Such volume of gas is usually a small item from the fire extinguishing standpoint. The chief results secured through the use of chemical apparatus of the soda and acid type is a cooling effect; that is, the fluid discharged by the extinguisher is directed upon the burning material and reduces the temperature of the burning material to a point below the re-ignition point. This is the manner in which such extinguishers operate. It is also the manner in which water streams operate.

It is commonly believed by many that the gas in the extinguishers produces a marked effect in extinguishing all fires; this is contrary to facts. However, where the fire is closely confined, the gas would exert an effect. Also, where a fire is very much confined, it is likely to be smouldering only, due to the fact that the air in the immediate vicinty of it has become depleted through the burning up of much of the available oxygen, and the addition of carbon dioxide from the extinguisher might result in extinguishment of the fire.

The object of the chemicals in the soda and acid extinguisher is to produce a pressure which will discharge an effective stream of the fluid. That extinguishers function very well in this manner is well recognized. As a matter of fact, pressure up to 125 pounds may be generated by the reaction of the acid with the soda, and this pressure is fairly well maintained during the course of discharge of the extinguisher.

This satisfactory pressure, plus the facility in directing the streams, makes the soda and acid apparatus very satisfactory for fighting fires.

As far as the laboratory tests are concerned, you are referred to the Underwriters' Laboratories at Chicago, Illinois, who have conducted experiments on many different makes of soda and acid extinguishers.

Spontaneous Ignition of Hay

To the Editor:

I would like to have you explain to me how spontaneous combustion takes place in wet hay.

We have had a number of such fires in past years and the cause of same was given as "spontaneous combustion" due to wet hay.

I have seen instances where hay has become so hot that you could hardly place your bare hand on it. I have smelled what I took to be gas arising from the same.

If this gas is the cause of fire how does it become ignited?

R. A. J.

Answer: Some materials will heat under certain conditions without the aid of any external source of heating. This is called spontaneous heating (and spontaneous combustion).

Numerous substances cause such an affinity for oxygen that they will under certain conditions combine with it slowly at ordinary temperatures. Oxidation results in heating, and if the heat is not dissipated the temperature rises, oxidation is accelerated, and the fire finally ensues. The greater the chemical attraction of the material for oxygen the more active the process. While for slow oxidation which may give rise to spontaneous ignition, or fire, it is necessary that theair or oxygen come into intimate contact with the material, or that a maximum of contact of the material with air per unit of volume exist. This contact is present in (1) very finely divided matter, (2) in porous materials which tend to absorb or "occlude" gases, and (3) in fermentation—("Industrial Fire Hazards," Dana-Milne.) Moisture plays a very important part in the actual phenomenon of spontaneous heating. It appears to be essential to the bacterial ferments, which cause heating in vegetable matter, tankage, etc., while in the case of absorptive or porous material, the drying out of the material after wetting causes air to be sucked into the microscopic interstices of the material under conditions favorable to chemical union of oxygen with the substance. This latter action appears to be that which sometimes results in spontaneous heating of charcoal or finely divided powder.

Many materials of vegetable nature are subject to heating through bacterial fermentation, especially when green

or moist. Among these are hay, straw, clover, barley, broom corn, grain, hemp, hops, tobacco leaves, etc. Incidentally the same phenomenon appears to be with animal matter, such as dry hides, and skins, and the tankage from which most of the oil has been removed, moisture in both cases being essential.

Spontaneous ignition is real and is responsible for many fires in hay stacks, hay mows, and at other points where hay, straw and other vegetable materials are stored in quantity.

Copra, which is the meat of cocoanuts, is particularly subject to spontaneous ignition, for in this case the bacterial action is rapid and the presence of the oil affords a means for heating due to oxidation through the action of the oxygen of the air on the oil contained in the copra.

FIRE PREVENTION ORDINANCE FOR CITIES AND TOWNS

It Establishes Bureau of Fire Prevention—Prescribes Regulations for Hazardous Materials and Processes

FOLLOWING is the continuation of a Fire Prevention Ordinance which has been prepared by the Engineers of the National Board of Fire Underwriters and is recommended by that organization for adoption by cities and towns. While it is not expected that in all cases smaller cities will find need for an ordinance of such length, it is recommended by the Board that a complete set of regulations be adopted in all cases for even though there may be no immediate need of regulation of a particular hazard, every growing community is sure to have these hazards introduced sooner or later, and it is better to be prepared for them than to develop unrestricted and then try to regulate them. The ordinance will be published in its entirety serially in FIRE ENGINEERING. *Following is a continuation of Section* 405:

(b) Two orifices or openings for each picture machine may be provided; one for the operator's view shall be not larger than 10 inches by 20 inches, and the other through which the picture is projected shall be not larger than 8 inches in greatest dimension. Where separate stereopticon, spot or flood light machines are installed in the same booth with picture machines, they shall be placed so as to be at least 5 feet away from any picture machine, and not more than one opening for each machine shall be provided for both the operator's view and for the projection of the light, but two or more machines may be operated through the same opening; such openings shall not be greater than 1080 square inches for each such machine accommodated. Each opening shall be provided with a gravity shutter of approved fireproof material. Shutters shall be suspended, arranged and inter-connected so that all openings will close upon the operating of some suitable fusible or mechanical releasing device, designed to operate automatically in case of fire or other contingency requiring the immediate and complete isolation of the contents of the booth from other portions of the building. There shall also be provided suitable means for manually closing all shutters simultaneously.

(c) All shelves, furniture and fixtures within the booth shall be constructed of incombustible material, and no combustible material of any sort whatever shall be permitted or allowed to be within such booth, except the films used in the operation of the machine. Each booth shall be provided with an approved film cabinet for the storage of films not on the projection machine. Film cabinets not of the individual compartment type shall have adequate vents to the outside air.

(d) Each booth must have an opening not less than 78 square inches for ventilation, which must be flanged to carry standard conductor pipe for exhausting the hot air generated in operating the machine. Connection for ventilation shall vent to outside of building. Draft in vent pipe shall be maintained by an exhaust fan of at least 50 cubic feet per minute capacity.

Part 5. Pyroxylin Plastic

501. The term "Pyroxylin Plastic" as used in this ordinance shall be held to mean and include any plastic substance, material or compound, other than nitrocellulose film as provided for in the film storage regulations, having soluble cotton or similar nitrocellulose as a base, including celluloid, fiberloid, pyralin, viscoloid, zylonite and similar products, materials, and compounds by whatever name known, when in the form of blocks, slabs, sheets, tubes or fabricated shapes.

502. All retailers, jobbers and wholesalers storing or handling more than 100 pounds of pyroxylin plastic shall obtain a permit; a permit shall also be required for the manufacture of articles of pyroxylin plastic, which shall include the use of pyroxylin plastic in the manufacture or assembling of other articles.

503. All display of pyroxylin plastic articles in stores shall be in show cases or show windows except as permitted below.

(a) Articles may be placed on tables but no table shall be over 3 feet wide and 10 feet long, and tables shall be spaced at least 3 feet apart. Where articles are displayed on counters, they shall be arranged in like manner.

(b) Spaces underneath tables shall be kept free of storage of any kind and of accumulations of paper, refuse and other combustible material.

(c) Sales or display tables shall be so located that in the event of a fire at that table, the table will not interfere with free exit from the room, in at least one direction.

(d) Electric or gas mantle light shall not be directly above any pyroxylin plastic material, unless provided with a suitable guard to prevent heated particles falling.

504. All new and existing buildings shall have all parts of the building used for the manufacture of articles of pyroxylin plastic equipped with a standard system of automatic sprinklers; buildings over two stores high used in part for such manufacturing shall have all other parts of the building equipped with a standard system of automatic sprinklers.

505. All raw pyroxylin plastic material in factory buildings shall be kept as follows:

(a) Where raw material in excess of 25 pounds is received in any building or fire area, an approved vented cabinet or vented and sprinklered vault shall be provided for the storage of the material.

(b) Not more than 1,000 pounds of raw material may be stored in cabinets in any one workroom, but not more than 500 pounds in any one cabinet, nor more than 250 pounds in one compartment.

(c) All raw material in excess of that permitted above must be kept in vented vaults not exceeding 1500 cubic feet capacity and with one automatic sprinkler head to each 125 cubic feet of total vault space and with construction and venting in conformity with standard practice for such use and satisfactory to the Bureau of Fire Prevention.

506. In factories manufacturing articles of pyroxylin plastic such sprinklered and vented cabinets, vaults or storage rooms shall be provided as may be necessary to prevent the accumulations in work rooms, of raw stock, stock in process or finished articles. Such cabinets, vaults or rooms shall be of such size, number, arrangement and location as specified by the Bureau of Fire Prevention.

507. In the work rooms of pyroxylin plastic factories, operators shall not be stationed closer together than 3 feet, and the amount of material per operator shall not exceed one-half day's supply and shall be limited to the capacity of three tote-boxes including material awaiting removal or use.

508. All waste materials such as shavings, chips, turnings, sawdust, edgings and trimmings shall be kept under water in a metal receptacle until removed from the premises.

509. No pyroxylin plastic shall be stored within 2 feet of steam pipes, radiators, chimneys, etc. Smoking is hereby prohibited in any establishment storing or handling pyroxylin plastic and prominent "No Smoking" signs shall be posted. Fire extinguishers, fire pails and other fire protection equipment deemed necessary by the Bureau of Fire Prevention shall be provided.

Part 6. Photographic and X-Ray Nitro-Cellulose Film

601. In hospitals and similar institutions, doctors' offices and X-ray laboratories, all unexposed nitrocellulose photographic and X-ray film, unless in unopened I.C.C. shipping containers, shall be stored in cabinets or vaults, as outlined below; all exposed nitrocellulose photographic and X-ray film shall be kept in outside storage houses or in not more than one cabinet within the building, constructed as outlined below.

602. In portrait and commercial studios, all exposed nitrocellulose photographic and X-ray film shall be stored in cabinets, vaults or outside storage houses, as outlined below; storage of unexposed film in excess of 50 cubic feet, unless in unopened I.C.C. shipping containers, shall be in a room equipped with automatic sprinklers.

(To be continued)

Ashtabula, O., Orders Aerial Ladder—Ashtabula, Ohio, has purchased a 75-foot Seagrave aerial ladder.

Fire Prevention Week to Be Generally Observed Throughout the Land

President Hoover Proclaims the Week of October 5 as the Time Set Apart for the Consideration of Fire Prevention—Almost Universal Observance of Week

THE observance of Fire Prevention Week, from October 5 to 11, judging from the news received from many quarters, will be very general by Fire Departments throughout the entire country. These observances will be supplemented in a great many instances by public ceremonies conducted under the auspices of Chambers of Commerce and civic organizations and in numberless cases public schools will take prominent parts in these observances. The matter will also be referred to in sermons in many of the churches.

President Hoover has issued a proclamation setting the week apart for this purpose, and many of the Governors of states have also issued similar documents.

Fire Departments will, in many cases, utilize their apparatus for the purpose of spreading the doctrine of fire carefulness during the week by driving the trucks through the streets with suitable placards upon them, setting forth the objects of the week, calling attention to the danger of accumulated rubbish in attics and cellars, and the hundreds and one other violations of the rules of safety by the citizens. Chiefs and other members of the departments will take part in the public observances of the week, will address meetings, demonstrate the pulling of alarms, and in every way bring the matter to the attention of the public.

Taken as a whole, indications seem to point to a greater and more widespread observance of this most important week than ever before.

Hoover Proclaims Fire Prevention Week

The week commencing October 5 has been set aside as Fire Prevention Week by President Hoover to call attention to the needless waste of lives and property by fire. The proclamation reads:

Whereas the North American Continent leads the world in the amount of its annual fire waste, one year of devastating losses following another, each, with but few exceptions, establishing a new high mark in the amount of valuable property burned and in the magnitude of economic losses, property losses alone in 1929 exceeding $470,000,000; and

Whereas thousands of persons annually die as a result of burns and many additional thousands are injured, 66 per cent of all fatalities from fire taking place in the home; and

Whereas the present conditions can be corrected only through the earnest effort of each one of us; and

Whereas it has been customary to observe national fire prevention week in the effort to instill into every citizen a full understanding of his individual responsibility in the curtailment of the mounting losses of property and life through preventable fires; now

Therefore, I, Herbert Hoover, President of the United States of America, do proclaim the week of Oct. 5, 1930, to be observed as national fire prevention week and, do invite the active cooperation of all in the prevention of fire waste and the consequent procuring the individual benefits and increased national prosperity.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this 17th day of September, in the year of our Lord, 1930, and of the independence of the United States of America the one hundred and fifty-fifth.

HERBERT HOOVER.

(Seal).

By the President:

HENRY L. STIMSON, Secretary of State.

Chicago to Vote on Large Bond Issue—At the November election, Chicago, Ill., will vote on a $5,670,000 bond issue to be used for the fire department.

Some Means To Further Fire Prevention

It has been pointed out by the Chamber of Commerce of the United States that fifty-five per cent of all fires of known origin that occurred in 1929 were strictly preventable and the remainder were partially preventable. Although the value of property destroyed by fire in 1929 was about $88,000,000 less than that destroyed by similar means in 1926, the annual fire loss in America is still the greatest in the world.

A survey recently completely by the National Fire Waste Council revealed that sixty-six per cent of all deaths caused by fires were in buildings of the dwelling class.

To further fire prevention in the home, a self-inspection blank has been designed to disclose the things that require attention. In many cities the blanks are distributed at school to the children and are then returned to the school. It is a common stunt for either the fire department, a local newspaper, or the school to conduct a fire essay contest on a fire prevention subject. Very often prizes are donated by local merchants in order to interest the children in this very important subject.

The various insurance organizations have prepared posters and stickers. Not only are the posters displayed in windows but they are also fastened to delivery cars and trucks. "Before and After" pictures have been taken by fire department camera men and used effectively at this time of the year.

When the Fire Prevention Week was first started, it was observed in but a few cities. Now in many states the governors have issued fire prevention proclamations and city officials take active parts in preparing fire prevention programs.

Fire Prevention on the Farms

Special effort toward prevention of fires on farms and in rural communities of the United States was urged by Secretary of Agriculture Arthur M. Hyde, in a statement following President Hoover's proclamation designating Fire Prevention Week.

Secretary Hyde stated that fires on farms last year took a toll of approximately 3,500 lives and caused property damage to an amount estimated at $100,000,000 or nearly one-fourth of the fire loss for the entire country. These losses are largely preventable, Secretary Hyde pointed out. The principal causes of farm fires are lightning, defective chimneys and flues, careless use of matches and smoking, sparks on combustible roofs, spontaneous ignition of agricultural products, careless handling and storage of gasoline and kerosene, and defective wiring, and improper use of electrical appliances.

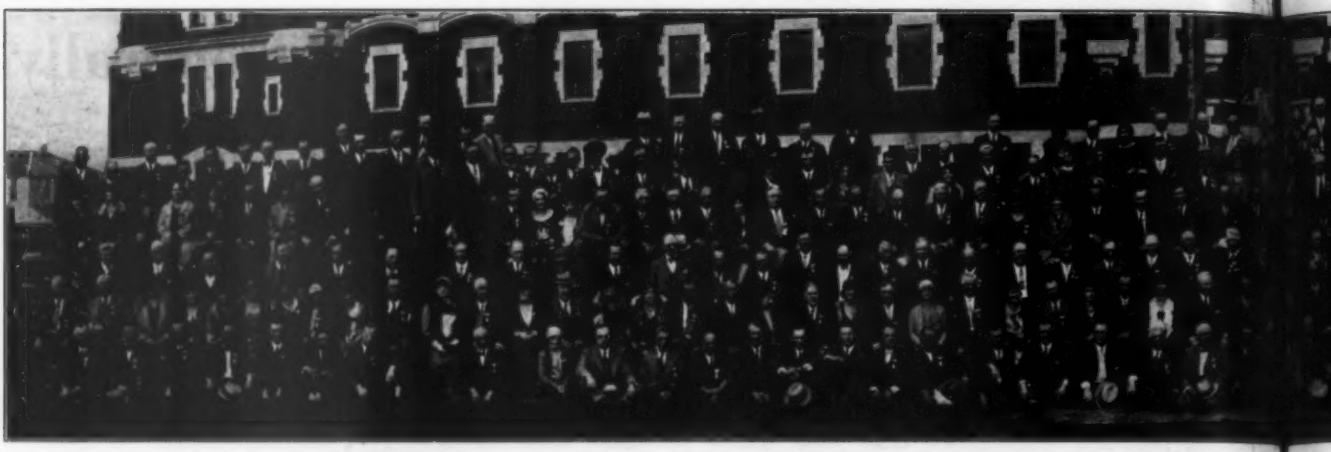
Conscientious and continued attention to the elimination of fire hazards, it was pointed out, should be given by every member of the rural community. Cooperative activity through civic organizations, schools, and clubs can do a great deal to inculcate and keep active a realization of the responsibility of each individual to combat the hazard of fire.

Work Started on Braintree, Mass., House—Work has started on a new combination fire and police station in Braintree, Mass., to cost $126,000.

Whitman Re-Elected Chief of Woodburn—C. E. Whitman was re-elected Chief of the Woodburn, Cal., Fire Department.

Cleveland to Purchase New Apparatus—Cleveland, Ohio, is considering the purchase of two new pieces of fire apparatus, one to replace a unit that was damaged in a street car accident.

Childress, Tex., Saves Insurance Premiums—According to a letter from the State Fire Insurance Commissioner, over $16,000 in insurance premiums were saved during the past two years by the good work of the Childress, Tex., Fire Department.



Members of the International Association of Fire Chiefs and Their Guests Assembled for the Convention

Notes of the I. A. F. C. Convention

The convention gave a rising vote of thanks to Chief R. J. Scott and Captains Tibbitts and Gowell of the Los Angeles Fire Department for their fine work in making the convention a success from the educational standpoint.

* * *

At the banquet tendered the Association by the city of Winnipeg on Thursday evening, Chief and Mrs. Ralph J. Scott were presented a beautiful testimonial in the form of a clock.

Chief and Mrs. Donald A. Boulden also received a similar gift, and in addition, a remembrance for Miss Boulden who was born while the Chief was attending the Birmingham convention last year.

* * *

In addition to Chief Boulden, the Convention Bureau of Winnipeg as well as the professional and business men of the city deserve the highest praise for the commendable manner in which the meeting was handled.

* * *

Chief Ralph J. Scott proved a presiding officer of the first rank. Meetings were called punctually to order, discussions on the floor were confined closely to the business before the house, and order was maintained in a highly commendable manner.

O'Donnell Heads Salvage Association

The annual meeting of the Salvage Officers Association was held in the Great Alexandria Hotel, Winnipeg, during the convention of the I. A. F. C. Superintendent John Townsend of St. Paul, Minn., presided.

The attendance indicated that considerable interest had been aroused in salvage work.

A number of instructive papers were read at the meetings. The one delivered by Chief Richard Smith of Pittsburgh, recently elected Second Vice-President of the I. A. F. C., was considered so thorough an exposition of salvage work and the value of such work to fire departments, that George W. Booth, Chief Engineer of the National Board of Fire Underwriters, offered to reprint the paper in pamphlet form and distribute it to the members of the International Association of Fire Chiefs.

Chief Brennan of San Francisco indicated by his remarks a detailed knowledge of salvage operation. He has been closely identified with the operation of a salvage corps in his own department from the time he started working in San Francisco as a pipeman.

The meeting closed with the election of Supt. James O'Donnell, of St. Louis, Mo., as President, Chief Daniel Shire, Mason City, Ia., Vice-President, and Supt. Keegan, Newark, as Secretary-Treasurer. John Ashmead, Hartford, Conn., was appointed by the President to take care of the publicity.

In the election of Chief Shire, the Salvage Officers Association indicated an appreciation of the cooperation given by the I. A. F. C.

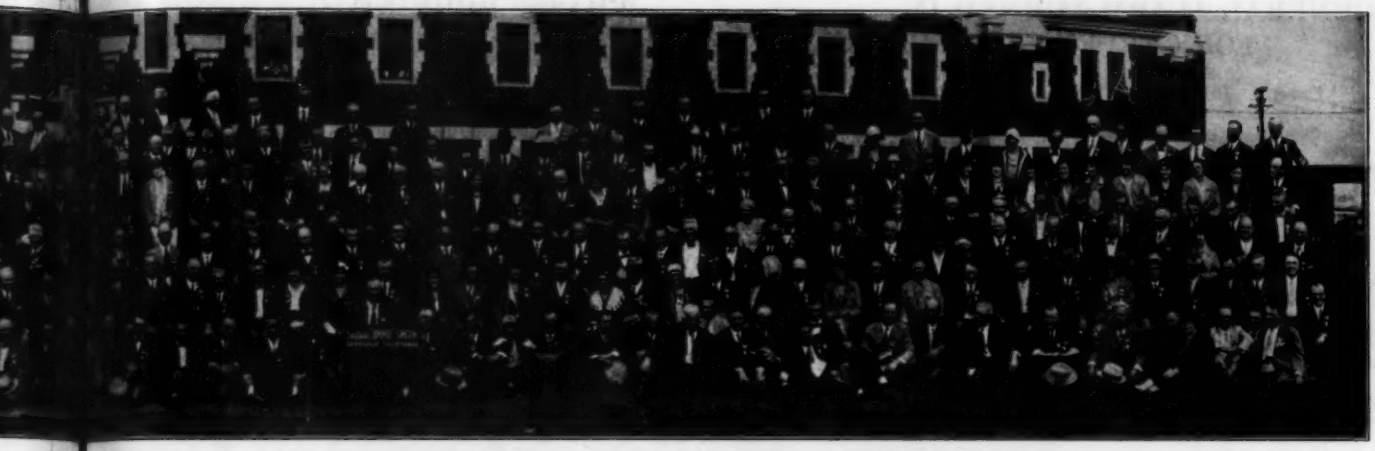
Attending the meeting were Chiefs Brennan, San Francisco; Smith, Pittsburgh; Kennedy, West Orange, N. J.; O'Brien, Indianapolis; Blake, Rockville, Ill.; Shire, Mason City, Ia.; George W. Booth, Chief Engineer, National Board of Fire Underwriters; Superintendents Keegan, Newark, N. J.; Walden, Worcester, Mass.; Egner, Kansas City; Hanson, Duluth; Ruane, Minneapolis; Curran, Indianapolis; Conway, Cincinnati, Hon. Superintendent Thompson, St. Louis, and John Ashmead, Hartford, Conn.

I. A. F. C. State Vice-Presidents Appointed

The Committee on State Vice-Presidents of the I. A. F. C. submitted the following names to be designated as Vice-Presidents of the various states. These nominations were accepted by unanimous vote of the delegates present.

Alabama—L. B. Hill, Bessemer.
Alberta—A. Dutton, Edmonton.
Arizona—W. J. Nemeck, Douglas.
Arkansas—Charles S. Hafer, Little Rock.
British Columbia—C. W. Thompson, Vancouver.
California—George Haggerty, Berkeley.
Colorado—P. D. McCartin, Colorado Springs.
Connecticut—Thomas F. Burns, Bridgeport.
Cuba—L. D. De Villages, Havana.
Delaware—W. J. Lutz, Wilmington.
District of Columbia—G. S. Watson, Washington, D. C.
Florida—W. R. Anderson, Fort Myers.
Georgia—J. B. Kennedy, Augusta.
Hawaii—T. H. Fogarty, Honolulu.
Idaho—A. H. Canfield, Pocatello.
Illinois—F. C. McAuliffe, Chief of Patrols, Chicago.
Indiana—W. Nill, Hammond.
Iowa—L. R. Morris, Ames.
Japan—S. Doi, Osaka.
Kansas—W. A. Buel, Parsons.
Kentucky—E. E. Cureton, Owensboro.
Louisiana—Frank J. Roddy, Monroe.
Maine—Oliver T. Sanborn, Portland.
Manitoba—D. A. Boulden, Winnipeg.
Maryland—R. G. Hoenicka, Cumberland.
Massachusetts—Charles L. McCarthy, Worcester.
Michigan—Frank Kuhn, Pontiac.
Minnesota—S. H. Hanson, Duluth.
Mississippi—L. F. McDonald, Jackson.
Missouri—Charles Alt, St. Louis.
Montana—T. W. Dewar, Havre.
Nebraska—Louis Hansen, Lincoln.
Nevada—W. R. Shaber, Sparks.
New Hampshire—J. E. Smith, Nashua.
New Brunswick—W. S. Vaughn, St. Johns.
New Jersey—William McLaughlin, Bayonne.
New Mexico—J. A. Robles, Mexicala.
New York—J. H. Golden, Cohoes.
North Carolina—D. E. Shuford, Hickory.
North Dakota—J. W. Sutherland, Fargo.
Nova Scotia—J. W. Churchill, Halifax.
Ohio—E. J. Green, Steubenville.
Oklahoma—George B. Goff, Oklahoma City.
Ontario—George Sinclair, Toronto.
Oregon—Tom Graham, Corvallis.
Pennsylvania—George Fehr, Freedom.
Phillipine Islands—W. A. Davis, Manila.
Quebec—R. N. O. Harrington, McCall Refineries, Montreal.
Rhode Island—Robert Lawton, Newport.
Saskatchewan—J. E. Faithful, Saskatoon.
South Carolina—H. B. Wells, Newberry.
South Dakota—Wm. A. Sloan, Sioux Falls.
Tennessee—J. T. Moore, Memphis.
Texas—C. J. Ollrie, Houston.
Utah—W. J. Knight, Salt Lake City.
Vermont—A. L. Kaltonski, Rutland.
Virginia—F. C. Jesse, Covington.
West Virginia—R. F. Doolittle, Fairmont.
Washington—W. A. Groce, Fire Marshal, Olympia.
Wisconsin—Ollie Norman, Superior.
Wyoming—E. P. Taylor, Cheyenne.

Fire Station Opened in South Bend—A new fire station has been opened in South Bend, Ind., and it will house a 500-gallon pumper.



for the C[illegible]tion Photograph in Front of the Armory Where the Exhibits Were Held in Winnipeg, Canada

FIRST OHIO FIRE SCHOOL DRAWS LARGE ATTENDANCE

Morning Sessions of School Set Aside for Lectures and Discussions—Practical Demonstrations of Equipment Arranged for Afternoon

By T. B. SELLERS

THE First Annual Ohio Fire School was held at Ohio State University, Columbus, Ohio, during the week of September 15-19, inclusive. This school was sponsored by the Ohio Municipal League, the Ohio Fire Chiefs' Association, the State Fire Marshal's Office, and the Ohio Inspection Bureau.

The morning sessions of the school were devoted to talks, illustrated lectures, and discussion. The afternoon sessions were devoted to practical demonstrations, the use of all kinds of fire apparatus, with special emphasis on minor equipment. This work was in charge of Assistant Chief C. T. Donnelley and six firemen of the Lakewood, Ohio, fire department.

At the conclusion of the school, a total of 238 attendance certificates were issued.

The complete program of the week's activities follows:

Monday, September 15

Registration and Room Assignment.
Purpose and Procedure of School—Dr. Harvey Walker, Chairman.
Organization and Operation of Fire Departments—H. J. Manning, Chief Engineer, Ohio Inspection Bureau.
Discussion.
Luncheon at Pomerene Hall.
Adjournment for lunch.
Drill Evolutions, Ohio Stadium—Assistant Chief C. T. Donnelley, Lakewood, O., in charge.

Tuesday, September 16

Round Table: Major Fire Department Equipment—H. C. Williams, Drill Master, Cincinnati Fire Department.
Discussion.
Minor Fire Department Equipment—Chief Jos. H. Speddy, Lakewood, O.
Discussion.
Housing and Care of Equipment—W. S. Winnard, Fire Dept. Instructor, Ohio Inspection Bureau.
Discussion.
Adjournment for lunch.
Luncheon at Pomerene Hall. The Work of the State Fire Marshal's Office—Ray Gill, State Fire Marshal.
Drill Evolutions.
Demonstration of Fire Apparatus. Ladder and Hose Trucks.

Wednesday, September 17

Round Table: Cooperation between Fire Department and Police Department.
Discussion.
Cooperation between Fire Departments and Water Departments—Robert E. Leedom, Fire Chief, Portsmouth.
Discussion.
Fire Department Hydraulics—Clarence Goldsmith, Assistant Chief Engineer, National Board of Fire Underwriters, Chicago, Ill.
Discussion.
Adjournment for luncheon.
Luncheon at Pomerene Hall. The Law of Fire Fighting in Ohio—Gilbert Bettman, Attorney-General, State of Ohio.
Drill Evolutions.
Demonstration of Fire Apparatus.

Thursday, September 18

Chemistry of Fire—Dr. Jesse E. Day, Department of Chemistry, Ohio State University.
Discussion.
Building Inspection as a Fire Department Activity—James Granger, Assistant Chief Fire Department, Cleveland, O.
Discussion.
Electrical Hazards—F. O. Evertz, Supt. Electrical Dept., Ohio Inspection Bureau.
Discussion.
Adjournment for luncheon.
Luncheon at Pomerene Hall. Other Special Hazards—Clarence Goldsmith, Assistant Chief Engineer, National Board of Fire Underwriters, Chicago, Ill.
Drill Evolutions.
Demonstration of Fire Apparatus. Minor Equipment.

Friday, September 19

First Aid and Resuscitation—F. S. Crawford, U. S. Bureau of Mines, Duluth, Minn.
Discussion.
Arson Detection—F. R. Morgaridge, Chief Special Agent, National Board of Fire Underwriters, New York, N. Y.
Discussion.
The work of the Underwriters' Laboratories—George E. Muldaur, General Agent, Underwriters' Laboratories, New York, N. Y.
Discussion.
Conferring of Certificates.

New Hampshire Firemen Meet

Four hundred firemen attended the thirty-third annual convention of the New Hampshire State Firemen's Association held in Dover.

The motion that a committee be instructed to draft a bill to be presented to the legislature for their attention which would create the office of State Fire Marshal was vetoed. It was felt that each town is capable of handling its own fire hazards.

Chief Carroll M. Nash, of Dover, was elected President; James Degnan, Nashua, First Vice-President; Chief Timothy E. Driscoll, Peterboro, Second Vice-President; Oscar P. Stone, Manchester, Secretary; Albert C. Melendy, Nashua, Treasurer; Perley G. Field, Exeter, Sergeant-at-Arms; Clarence D. Fay, Hinsdale, and John D. Grady, Dover, members of the Executive Committee.

Ex-Deputy Chief of Norwalk Dead

Former Deputy Fire Chief Frederick M. Wheeler, who has been connected with the Norwalk, Connecticut, fire department for the past forty-seven years, died suddenly on September 22 with a heart attack while working at the plant of the Siegel Lock Company of Norwalk. He was sixty-five years of age.

The deceased was chief of the East Norwalk fire department from 1895 until 1913, when he was made deputy chief in that town after the merging of East Norwalk with the city of Norwalk and the fire departments placed on a permanent basis. Former Chief Wheeler was a member of the Connecticut State Firemen's Association and also connected with the Fire Chiefs' Club of Connecticut. He is survived by his widow and daughter.

THOMAS F. MAGNER.

Williston Park Refuses Extra Apparatus—Officials of Williston Park, N. Y., have refused the plea that extra fire apparatus be purchased on the grounds that there is no facilities for housing the contemplated purchase.

GENERAL ALARM TURNED IN FOR CARPET FACTORY FIRE

Several Injured by Jumping to Ground—Large Number of Women Employed—Apparatus From Outlying Sections Responded to Call

THE eight fire companies of Paterson, N. J., and apparatus from Prospect Park, Fairlawn, Wortendyke, Hawthorne and Haledon responded to fight a fire that razed the Lamond & Robertson Carpet Mill in Paterson.

The blaze started in the jute storage room, and with the rapidity of an explosion, spread to other sections of the L-shaped brick building. The first alarm was turned in at 11:25 a. m., the second and third shortly afterwards, and the general alarm was sent at 11:40. As a safety measure, children in a public school three blocks distant were not permitted to leave for their luncheon recess.

The Associated Piece Dyeing Works, which adjoined the carpet mill, was also damaged. Two hundred employees in the two plants hastily rushed to the street. Several persons

Two Views of the Carpet Mill Fire in Paterson

Upper—All that remained of the Lamond and Robertson Carpet Mill following the rapid spread of fire. Lower—Firemen from all the companies in Paterson, assisted by fire departments of nearby municipalities, playing streams on the burning carpet mill.

were injured when they jumped to safety from the second floor. Two firemen were injured when caught by flying debris. There was considerable confusion, when due to the large dense clouds that spread over the city, rumors started that many were trapped by the fire. A check-up by the police revealed that all employees were out of the building.

In addition to the damage to the two factories, flames spread to a frame building and destroyed it. The total damage has been roughly estimated at $500,000.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Week Ending September 19	Loss in Thousands of Dollars
TROY, N. Y.—Salesrooms of Ashton-Collins Corp.	80
IRVINE, KY.—Bldg. occupied by Ford Motor Agency	40
KIRKSVILLE, MO.—Princess Drug Store, adj. property	30
NEWARK, N. J.—Dwelling at 97 Prospect St. damaged	25
APPLETON, WIS.—West College Avenue business property	80
MONTREAL, QUE.—Plant of Maple Leaf Milling Co.	125
CUMBERLAND, MD.—Roundhouse of Western Maryland R. R.	125
LOS ANGELES, CAL.—Factory of S. J. Ganzel Mfg. Co.	65
NEWPORT, VT.—The Newport hotel damaged	65
FOND DU LAC, WIS.—Ackerman drug store bldg.	25
NIAGARA FALLS, N. Y.—Plnat of U. S. L. Battery Corp.	30
PICHER, OKLA.—Eleventh Hour Mine damaged	70
MARIETTA, OHIO—Yellow Cab Garage and Marlow Printing Co.	30
CHANDLERVILLE, ILL.—State Bank and adj. property	80
MODESTO, CAL.—Entire business block destroyed	125
SEYMOR, CAL.—Whse. of Sutter Basin Corporation	400
SAGINAW, MICH.—Farm property of Mrs. C. E. Moiles	35
MT. VERNON, WASH.—Camp of Monthorne Logging Co.	35
ABERDEEN, S. DAK.—Aberdeen Candy Kitchen of S. Pappas	40
PITTSBURGH, PA.—Whse. of Atlantic Refining Co.	25
MODESTO, CAL.—Stanislaus Co. Farmers' warehouse	100
TERRE HAUTE, IND.—Lederer drygoods store damaged	50
LINCOLN, NEBR.—Standard Oil Co. gasoline tank train	75
BROOKLYN, N. Y.—Plant of Ernest Zoehl Co. destroyed	125
JOLIET, ILL.—Ridgewood school destroyed	35
CAMDEN, ARK.—Tank No. 6 of Houston Oil Co.	35

Week Ending September 26	
SEATTLE, WASH.—Kullen Bldg. on Western Avenue	80
TOLEDO, OHIO—Plant of Henly Millwork Co.	25
BRAWLEY, CAL.—C. F. Ellis store destroyed	150
ANGELICA, PA.—Summer home of J. H. Sternbergh	40
ATLANTA, GA.—Knox Apartments destroyed	100
ST. LOUIS, MO.—Westlake Park St. business property	80
LAKE GENEVA, WIS.—Barn on F. L. Maytag's estate	25
TOLEDO, OHIO—Four-story apartment bldg.	25
LOCKLAND, OHIO—Whse. of Richardson Co.	30
CHICKASHA, OKLA.—Whse. of Chickasha, Cotton Oil Co.	175
CENTRALIA, MO.—Four business houses on 17th and 18th Sts.	45
M'COMAS, W. VA.—Coal cleaning plant of Amer. Coal Co.	175
SPRINGFIELD, ORE.—Historic Springfield Mill & Grain Co.	220
LOS ANGELES, CAL.—MacMarr Stores warehouse destroyed	350
SHARPSBURG, IA.—Richey grocery and adj. property	25
WHITMAN, MASS.—F. J. Carey garage destroyed	65
BUFFALO, N. Y.—Freight sheds of American R. R. Express	35
CHICAGO, ILL.—Club house of Barrington Hill Country Club	125
WICHITA, KAN.—Main barn at Wichita stock yards	25
WOODSTOCK, N. B.—Service station of Kerrigan Everett	30
MUKILTEO, WASH.—Puget Sound & Alaska Power plant	200
PHILADELPHIA, PA.—Old Taber mansion damaged	25
BOSTON, MASS.—Yards of American Coal Co., adj. property	80
MT. STERLING, KY.—Property of Mrs. T. J. Thomas	80
CHICAGO, ILL.—Scale house and hay barn at stockyards	65
LIMA, OHIO—Oil tank on Buckeye Pipe Line destroyed	80
MONT ALTO, PA.—Property of Penna. State Sanitarium	25
KEYSER, W. VA.—Stehley Orchard Cannery, 9 mi. out	40
NASHVILLE, TENN.—Fruit plant of E. S. Hertzka	25
LAKE GEORGE, N. Y.—Four business bldgs. destroyed	80
JAMESTOWN, N. Y.—Abrahamson-Bigelow dept. store	400

Ex-Chief of Belleville Fire Department Dies—Former Chief Nicholas Conesky, of Belleville, N. J., died at his home recently.

Virginia State Firemen's Hold Convention—At the annual convention of the Virginia State Firemen's Assn., held at Phoebus, C. E. Woodward of Lexington, Ky., was elected President, while F. C. Forney of Winchester, Va., was elected Vice-President. The next meeting of the Association will be held in Winchester.

Eastchester's Annual Inspection and Parade—The Fire Department of Eastchester, N. Y., held its annual inspection and parade on Thursday, September 25, 1930. The inspection took place at the North End Hose Company, Wilmont Road, Eastchester, at 9:00 p.m. Immediately following this inspection, dinner was served at Richards' Elm Street and Bronx River Parkway, Tuckahoe, N. Y. Arthur Steuhl is Chief of the Eastchester Department.

Arkansas Firemen Elect Officers—F. M. Brock, chief of the Bentonville Fire Department was elected President of the Arkansas State Firemen's Association meeting held at McGehee, Ark. The other officers are Joe Morris, Eureka Springs, First Vice-President; John Grant, DeQueen, Second Cice-President; R. F. Maupin, McGehee, Third Vice-President; H. D. Compton, Little Rock, Secretary-Treasurer. Little Rock, Ark., was selected as the next place of meeting of the Association.

PROGRESS IN FIRE EQUIPMENT THROUGH MODERN RESEARCH

Design of Present-Day Fire-Fighting Equipment Made Possible by Considerable Development and Research Work by Manufacturers

By NORMAN F. KIMBALL

IT is a far cry from our present modern fire-fighting equipment to the days when leather buckets, hand pumps and other crude fire extinguishing devices were considered the ultimate in fire protection. Despite the fact that fire hazards today are probably greater than at any other time in history, we are better equipped than ever before to combat them.

We have modern pumping engines, fitted with the latest mechanical features, capable of throwing hundreds of gallons a minute to great heights and distances. Aerial trucks have been developed which for speed and safety of operation have never been equalled; huge, powerful triple combination machines, "quads," city service trucks, water towers, rescue and squad cars, all are marshalled against fire on the side of the modern fire-fighter.

Besides these mighty motor fire apparatus units we have chemicals whose effectiveness in fighting fires was undreamed of a comparatively few years ago. Nor has development stopped. Almost every day some new problem arises in the fire protection field. How are these problems met and solved and improvements incorporated in existing devices, or new ones designed which will cope with them? This is the job of the manufacturers of fire-fighting equipment. It is not a task to be held lightly. Every new fire-fighting device which is developed must be reliable. Theories, suppositions, surmises are not enough. A fire-fighting unit, whether it be the largest piece of motor fire apparatus or the smallest hand chemical extinguisher, may be worse than useless unless it is 100 per cent effective for the type of fire protection service for which it was designed.

There is only one sure way of determining these facts and that consists of a series of painstaking tests which duplicate as nearly as possible the conditions with which the unit will be called upon to cope during actual service.

Realizing these facts, the American-LaFrance and Foamite Corporation of Elmira, N. Y., devotes special attention to development and experimental work. This company's experimental station, together with machine shops equipped to carry on all types of development and research work, occupies a large plot of ground on the outskirts of Elmira. It is here that, daily, the company's chief engineer, representatives of the sales department and others, gather with the experimental station's staff of development experts to put their theories to actual test.

Thousands of tests are made here in the course of a year. They are divided into two classifications, namely, one involving chemical and the other motor fire apparatus equipment. Every facility is provided for the proper conducting of tests. In the chemical section of the experimental station, more than a dozen specially constructed buildings and other structures have been provided. For example, one structure is constructed to represent the engine room and bilges of a pleasure yacht. In this structure exhaustive tests are conducted with carbon dioxide extinguishing systems.

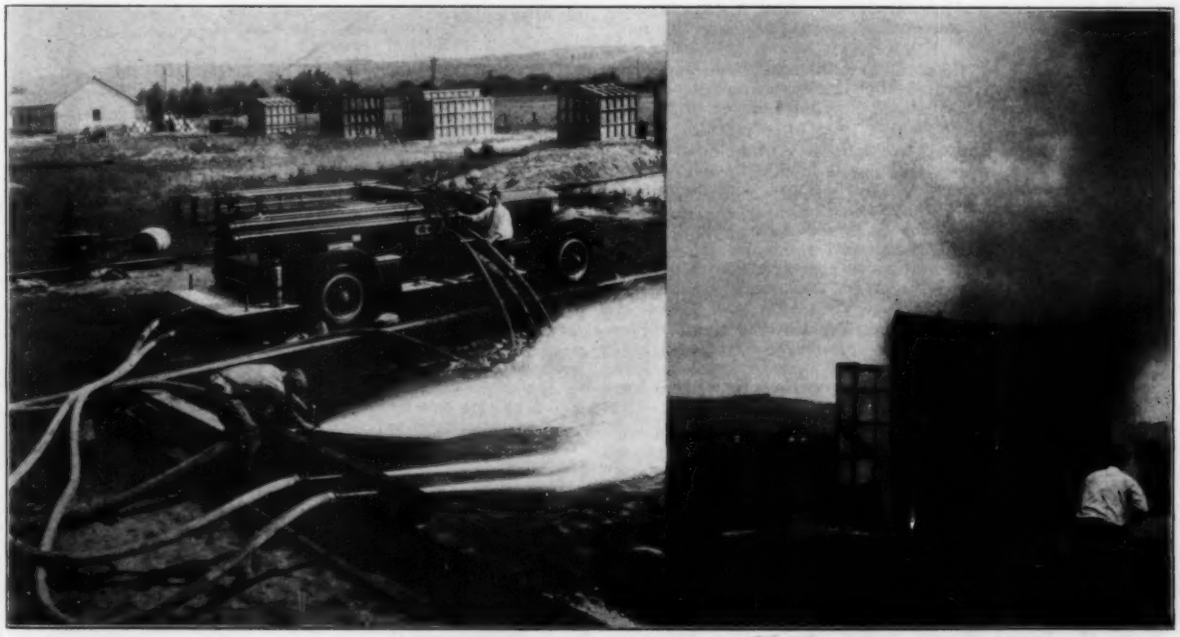
Another structure is made of iron to represent the hatchway and quarter section of an oil tank on a tanker. This, too, is equipped with a carbon dioxide system, and tests to determine the right type and position of discharge nozzles are frequently conducted.

Main Experimental Station of the American-LaFrance Company at Elmira

Other experimental houses found at the station include a paint storage house, dip tank houses and various other buildings in which all chemical fire-fighting devices manufactured by the company are tested.

In addition to these various structures, the experimental lot has a large pit in which tests are conducted on fires involving gasoline, oil, tar and similar inflammables, and a miniature oil tank, 25 feet in diameter.

(*Continued on page 880*)



Two of the Many Tests That Are Being Constantly Made

Left—Testing pumpers at a specially constructed pool that holds 75,000 gallons of water. All practical conditions can be duplicated here. In the background are test houses that are used for practical fire tests. Right—Extinguishing a fire in a test house filled with paint, turpentine and lacquer.

FIRE DEPARTMENT ACTIVITIES

Ricketts, Ia., Buys Pumper—Ricketts, Ia., has purchased a pumper equipped with a chemical tank.

Canon City Has New Apparatus—Canon City, Co., has received new Seagrave apparatus.

Homewood, Ill., to Purchase Pumper—Homewood, Ill., is planning to purchase a 750-gallon pumper.

Keota, Ia., to Get Fire Protection—Keota, Ia., is raising funds for the purchase of Boyer fire apparatus.

Bellefonte, O., to Buy Apparatus—Members of a fire company in Bellefonte, Ohio, have decided to buy fire apparatus.

Burch Chief of Glens Falls, N. Y.—Floyd Burch has been named head of the fire department in Glens Falls, N. Y.

Richmond, Ind., Buys Pumper—Richmond, Ind., has placed an order for a 600-gallon Ahrens-Fox pumper.

Pottsville, Pa., Has New Pumper—A 500-gallon Seagrave pumper has been placed in service in Pottsville, Pa.

Vernon Township to Have Apparatus—Farmers in the township of Vernon, Ind., and residents of Fortville have purchased apparatus for the protection of rural property.

Uniontown, Pa., Buys Ladder Truck—Norristown, Pa., has purchased a Mack ladder truck for $10,635, and it will be delivered soon.

Aerial Ladder Delivered to Bayonne, N. J.—A 75-foot aerial ladder has been delivered to Bayonne, N. J. It is stationed at fire department headquarters.

To Inspect South Carolina Institutions—A thorough inspection is to be made of all state institutions in South Carolina.

Spokane to Erect Fire Station—A contract has been awarded for the construction of a new fire station in Spokane, Wash.

Indianola, Ia., Limits Fire Runs—The City Council of Indianola, Ia., has ruled that the fire apparatus must not go outside the city limits.

Apparatus Replaced at Cleveland—A new Seagrave 85-foot hook and ladder fire truck has been purchased to replace the one at the Euclid Avenue, and East 105th Street station which was recently wrecked by a street car.

Birdsboro, Pa., Has New Apparatus—A triple combination has been delivered to Birdsboro, Pa. A parade was arranged to give the residents a chance to view the new apparatus.

Mt. Holly, N. J., Celebrates Anniversary—Firemen of Mt. Holly, N. J., celebrated the 125th anniversary of the Relief Fire Company. A steam pumper built in 1852, the first apparatus of the community, was on display.

Maryland Holds Short Fire School—A four-day course in fire fighting and fire prevention was held at the University of Maryland starting September 2. Those who completed the course were awarded diplomas.

Utica Awards Fire Alarm Contract—Utica, N. Y., has awarded a contract to the Gamewell Company for the installation of a fire alarm system to cost $58,000. The contract stipulates that the system be completed within two hundred working days.

Cleveland, Ohio, to Buy Ladder Trucks—Cleveland, Ohio, has opened bids for the purchase of two 85-foot aerial ladder trucks. Bids for aerial ladders were rejected in July by Safety Director E. D. Barry because the prices were too high.

Dallas, Tex., Sells Department History—A fund of $10,000 is being established in Dallas, Tex., to benefit those who would not be taken care of through the regular pension fund. The money is being raised by the sale of a book setting forth the history of the department.

Rhinelander Limits Run of Apparatus—Until some arrangement is made with neighboring communities to assume responsibility for accidents and for operating costs, apparatus of Rhinelander, Wis., will not go outside of the corporate limits.

Kent, O., Forms Rescue Squad—Headed by Assistant Chief Robert Clark, a rescue squad has been formed in Kent, Ohio. The equipment includes two gas masks, a rescue boat, drag hooks and a first aid kit. Eight men will serve on the squad.

Burlington, Ia., After Increase—Petitions are to be circulated in Burlington, Ia., to have the question of a ten-dollar monthly increase for members of the Fire Department, placed on the ballot at the city's next regular election. The city council had turned down the request for an increase.

New York Firemen Back Wage Bill—At a convention of the New York State Permanent Firemen's Association held in Rochester, N. Y., New York City firemen pledged their support to a movement for a $2,500 minimum wage bill for firemen. This bill will be presented at the next legislature.

Hood River Has Emergency Car—A Ford car has been fitted up as an emergency car for use by the Hood River, Ore., Fire Department. It will carry stretchers, life gun, grappling hooks, first aid kits and other emergency equipment.

Better Protection of Forests Urged—Congressman Harry Englebright, California, sponsor of a bill to secure an appropriation of $600,000 for the prevention of forest fires feels sure that his bill be accepted during the December session. The bill is sponsored by the State Chamber of Commerce.

Portland to Give Fire Course—Portland, Ore., will open a fire college at the Central Fire Station. A two year's course of study has been planned to include hydraulics, chemistry, fire administration and other important subjects. The course will be open to senior and junior captains who will attend on their own time.

Rule on Fire Protection Tax—The attorney general of Illinois has ruled that a municipality has no right to expend funds derived from the two mills fire protection tax to extend or maintain its water plant. Such funds can be used to install fire hydrants or to purchase equipment directly connected with the operation of the fire department and used strictly for fire protection purposes.

A Thousand Chiefs Respond to One Fire—While some fires are only deemed large enough to require the services of, say, half a dozen chiefs, a blaze that started in a hall in Oakland, Cal., resulted in a thousand fire chiefs responding. The chiefs were assembled in an adjoining building to attend the annual convention of Pacific Coast Association of Fire Chiefs.

Progress in Fire Equipment

(*Continued from page* 859)

The main building at the experimental station is a large structure 60 x 120 feet. It is divided into two sections. One contains the experimental shop in which development work is carried out in the chemical division, while the other section is devoted to testing and development work with motor fire apparatus. Both sections contain the most modern equipment available.

In the motor fire apparatus section, a dynamometer is provided for testing motors. With this equipment, the innermost secrets of a gasoline motor are laid bare. It is possible to accurately gauge revolutions per minute, horsepower, torque, gasoline and oil consumption, wear of parts, friction power loss and a score of other facts of great worth to the experimental engineers. All new engines are subjected to this exacting test and the slightest variations from the high standards set mean rejection. Then, engineers and research men tear the machine down and painstakingly inspect each part with the aid of delicate instruments.

Fire pumps are also given long and comprehensive tests. An important part of these tests include actual pumping demonstrations. To make this possible a large pumping tank 75 x 25 feet with a capacity of 75,000 gallons of water, is an important feature of the experimental station. By the use of this tank, exhaustive tests may be made with various hose layouts and, by means of a specially designed platform on which pumping units may be run, accurate draft tests may be conducted.

Each year among the many visitors are included fire chiefs, city officials, industrial safety engineers and business men. Invariably, the tests which they witness are conducted on actual fires of the type in which they are most interested.

The Crime of Arson

(*Continued from page 867*)

This brings us to the collection of evidence. Usually the first problem with which we are confronted is the proof of the corpus delicti, which simply means proof that a crime has been committed. It is not sufficient in an arson case merely to prove that a fire occurred, but it must be established that the fire resulted from some human agency with criminal intent, because all fires are presumed to be accidental and to sustain a conviction this presumption must be overcome by a satisfactory showing that the fire in question was incendiary.

Establishing the Corpus Delicti

The corpus delicti must be established before any confession or admission of the defendant may be introduced. This does not mean, however, that testimony or evidence independent of the statements of the defendant tending to connect him with the setting of the fire is barred, for it is obvious that any evidence which may prove that the accused maliciously started the fire at the same time proves that it was incendiary.

The courts, generally, have been very liberal both as to the quantity and quality of testimony required to establish the corpus delicti, provided, of course, the sum total of evidence is sufficient to sustain a conviction or, in other words, to warrant a jury in believing beyond a reasonable doubt that the accused is guilty as charged. The evidence may be either direct or circumstantial and when circumstantial, as is generally true in arson cases, must be such as to exclude any reasonable theory consistent with the innocence of the defendant.

Proof of Motive Strengthens Case

Proof of motive is not essential to the proof of incendiarism but very materially strengthens any case and is highly important where the evidence is wholly circumstantial. The arsonist may be a pyromaniac. Or the motive may be to conceal the commission of some other crime. It may be revenge. It may be fraud. The last is by far the most frequent motive, with the insurance buying public the ultimate victim. In fact, in some sections of the country the phrase "Sell it to the insurance company" at one time was a by-word. In another locality in southwestern United States where a revenge burner was at large for over a year, causing some fifteen incendiary fires, the expression was slightly varied but the same sentiment was expressed in the motto "Let the insurance company worry." Gross over-insurance on either building or contents; additional insurance obtained shortly before the fire; the removal of furniture and other articles from the house before the fire, threatened foreclosure of a mortgage; financial embarrassment and a desire to change location are all circumstances tending to show a motive.

How Evidence Can Be Carelessly Destroyed

It would seem, however, that the question of more vital importance to fire chiefs, is what they can do to assist in obtaining evidence with which to convict the arsonist. I would like to suggest first some of the things that should not be done. In a case investigated by one of our Special Agents a fire had been started by placing a candle against the door leading from the back porch to the kitchen of a residence. The fire was extinguished by occupants of the building but not until the candle had been melted into a flat cake with part of the wick imbedded in it. A police officer was called to make an inspection. He took possession of the remains of the candle, carefully placing it in his hip pocket. When he next thought of it he found it thoroughly pulverized and threw it away, thus destroying indisputable evidence of the incendiary character of the fire.

At the scene of another fire a nickel-case flashlight was found burning and so placed that the light from it shone on an inflammable pile of material where the fire was started, but which was extinguished before any great damage was done. This flashlight was carelessly picked up and thoughtlessly handled by numerous persons who did not realize that it might be the means of solving the mystery of the fire. It seems superfluous to add that this telltale bit of evidence should not have been touched by human hands till it had been submitted to a fingerprint expert for examination.

In another case that came to our attention a considerable quantity of inflammable material was used in starting a fire but was not entirely consumed, due to the good work of the Fire Department, and was taken possession of by the police. A suspect was arrested and confessed but when bought to trial entered a plea of not guilty. When the evidence was called for it was found it had been destroyed by the officer as it was thought to be useless in view of the confession. However, without it the corpus delicti could not be established and in turn the confession could not be introduced and the case had to be dismissed.

It was found in another instance that a quantity of excelsior saturated with coal-oil had been used to start an incendiary fire. It was turned over to the Police Department with the request that it be placed in a covered tin container to prevent evaporation of the kerosene and also for safe keeping. At the trial when the evidence was called for it was found that the excelsior had been left in an open box in the outer office. A match, carelessly thrown into it, ignited it and the evidence had been thrown into the street where it was consumed.

Another fire in a city of considerable size was started by placing a carton of paper towels saturated with gasoline at an advantageous location in a barber shop. A trail of sawdust also saturated with gasoline led from this box to the door. The fire occurred at one o'clock in the morning but it was extinguished with little damage. After the fire this plant with other debris was swept into the gutter. Before daylight the evidence, together with a truckload of other litter had been carefully deposited by an efficient street cleaning department in the incinerator.

It seems superfluous to say that these are a few glaring examples of what *not* to do. In each case the evidence to prove the corpus delicti—the incendiary origin of the fire—was destroyed and a successful prosecution defeated.

Case Where Evidence Was Preserved

On the other side of the ledger I might relate an incident that occurred in an Arizona city. A rooming house had been ordered closed for several good and sufficient reasons. The landlady and her companion were seen hurriedly leaving the place in the early hours of the morning shortly before it burst into flames. The fire was extinguished after doing considerable damage. The night before all applicants for rooms had been refused accommodations. An empty coal-oil can was discovered on the back porch of the floor where the fire started. Two separate fires appeared to have been burning at the same time. There was every indication that the fire was incendiary but the Fire Marshal and our Special Agent were not quite satisfied that the corpus delicti could be established. Consequently, they donned their overalls and combed the debris. The bed in the landlady's room was of wood construction. The posts had burned permitting the spring and mattress to fall to the floor. Underneath the mattress was found a large sofa pillow thoroughly saturated with coal-oil, the fire in the pillow having been smothered by the falling mattress. Thus with a little thought and some disagreeable work a perfect and complete chain of evidence was established.

All Fires Should Be Watched for Evidence of Arson

A very few incendiary fires are started in exactly the same way, and as all the circumstances surrounding one fire may never be combined in another, it is difficult to suggest a course of procedure of any value except in the most general terms. The most important duty of a fireman in responding to an alarm is, of course, to see that no human lives are in danger and to extinguish the blaze as quickly as possible with a minimum of damage to the property.

But without lessening his efficiency in this regard, he should approach a fire with this query in mind, "Is it accidental or incendiary and if incendiary, how did it start and who set it?" Mental note may be made as to whether the doors and windows are open or closed and locked. The color and odor of the smoke and the manner in which the fire is burning might prove valuable as evidence. It should be observed whether two or more separate fires are burning at the same time. Any material used to start the fire should be carefully preserved, and if saturated with any inflammable or combustible substance should be placed in an air-tight container to prevent evaporation. Any article thought to have been used by the arsonist that might bear fingerprints should be handled so as not to obliterate the impression and should be submitted to an expert as soon as possible. The debris resulting from a questionable fire should not be swept out or disturbed until it has been carefully searched for evidence. The demeanor of the owner, if present at the fire, should also be observed. Discussion among the firemen after they have returned to the station should be encouraged and anything of a suspicious nature should be reported to the Chief; and all Chiefs are urgently requested

to call upon our Special Agents for assistance at any time in the investigation of a questionable fire. The whole question of evidence so far as we are concerned may be summed up in the two words—*observation* and *preservation*.

In some sections of the United States Arson Squads, consisting of one or more firemen and a police officer, have been organized for the purpose of investigating questionable fires. In many cities particularly in the State of Tennessee, they have been very active and effective. To those who are not familiar with the arson squad idea the suggestion of such an organization is made for your consideration.

How to Prevent Incendiary Fires

There is another way in which the Fire Department can be of great service and that is in the matter of fire prevention. I do not refer to the ordinary methods used to prevent accidental fires but rather to the anticipation and prevention of incendiary fires. There are certain nationalities among whom suspicious fires most frequently occur. There are certain types of business, such as furs, cloaks and suits, millinery, etc., which seem to be the favorite target of the questionable fire. The Fire Chief should know, directly or through some designated member of his force, the moral as well as the physical fire hazards of his city, particularly in the business section. Frequent inspection of places operated by persons of questionable integrity at small profit and suggestive comment to the proprietor of such a place might convince him that a fire would not be a profitable investment.

"A Foeman Worthy of Our Steel"

The day of the fireman who need only know how to turn on the water and hold a nozzle is long past. To qualify for service on the modern fire department a man must be alert and intelligent because a tremendous responsibility rests upon his shoulders. The annual loss of life by fire in the United States is estimated at 15,000 human beings and property damage is approximately 475 million dollars. It is estimated that twenty per cent of all fires are incendiary and if such fires took only their pro rata toll, the arsonist would be responsible for 3,000 deaths and the destruction of 95 million dollars worth of property. But there can be little doubt that the casualties and property damage resulting from incendiary fires are much greater than from accidental fires. Arson fires are also said to be responsible for fifty per cent of deaths among firemen in the line of duty.

Thus it will be seen that the task of combatting the arsonist is not a fiction. It is not a figment of the imagination. It is a real and pressing problem. The incendiarist is "A foeman worthy of our steel." Therefore it behooves us to put our combined shoulders to the wheel in an effort to eliminate this menace. And remember "eternal vigilance is the price of victory."

Statistics of the Model Arson Law

States That Have Adopted the Model Arson Law:

Alabama
Arkansas
California
Delaware
Florida
Georgia
Illinois
Indiana
Iowa
Kentucky
Louisiana
Maryland
Michigan
Missouri
New Hampshire
New Jersey
New Mexico
North Carolina
North Dakota
Ohio
Pennsylvania
Rhode Island
South Carolina
South Dakota
Tennessee
West Virginia
Wisconsin

States Having Satisfactory Arson Laws:

Massachusetts
New York
Texas

The Model Arson Law was adopted by the Fire Marshals' Association of North America, December, 1920.

States That Have Not Adopted the Model Arson Law:

Arizona
Colorado
Connecticut
District of Columbia
Idaho
Kansas
Maine
Minnesota
Mississippi
Montana
Nebraska
Nevada
Oklahoma
Oregon
Utah
Vermont
Virginia
Washington
Wyoming

(From a paper read before the annual convention of the International Association of Fire Chiefs at Winnipeg, Man.)

N. J. Firemen Re-elect Gen. Spencer

Gen. Bird W. Spencer, who has held the office of President of the New Jersey State Firemen's Association for more than a quarter of a century, was again reelected to that office during the annual convention held in Atlantic City, N. J., on September 19 and 20. The only contested office was that of Treasurer. Charles E. Burr of Bordentown was elected.

A resolution was passed reducing the Treasurer's salary from $3,000 a year to $2,000. In line with an economy program, the assessments paid by each of the 406 member companies was reduced from $80 to $75 a year.

The annual convention will again be held in Atlantic City. The following were elected Vice-Presidents—two each for Hudson and Essex Counties and one each from the other counties in the state: Hudson, John Kelly and Ernest Beckett; Essex, Harry Lansberg and H. W. Cochraine; Atlantic, Henry W. Phillips; Bergen, Chris Hasselhahn; Burlington, David A. Brotherton; Camden, Oliver P. Lambert; Cape May, William Gilbert; Cumberland, Walter Boodei; Gloucester, Robert Meyers; Hunterdon, Charles Rittenhouse; Mercer, Frank Wright; Middlesex, Frank Tooker; Monmouth, William R. O'Brien; Morris, Aaron Bash; Ocean, Peter Knorr; Passaic, Anthong Frylinck; Salem, Fred Casper; Somerset, Joseph Mallett; Sussex, William Bailey; Union, Allen C. Eckel, and Warren, Orville Smith.

The New Jersey State Fire Chiefs' Association held its meeting at the same time. This one day gathering constituted the annual meeting, while the other three meetings held during the year are termed quarterly meetings.

Chief McAuliffe Weds Secretary

Frank C. McAuliffe, head of the Chicago Fire Insurance Patrol, and Miss Helen Trautman, his secretary, were married in the Holy Name Cathedral in Chicago.

Chief McAuliffe is forty-one years old, and he has been a widower for two years. After the wedding ceremony, the couple left for Winnipeg, Canada, to attend the I. A. F. C. convention.

Tahlequah Purchases Fire Truck—The city council of Tahlequah, Okla., has purchased a new $3,000 fire truck to replace the old one which has been in use for many years.

Ridgewood Fire Department Chief Dies—John Carlock, acting chief of the Ridgewood Fire Department, died at his home in Ridgewood, N. J., recently. Chief Carlock was known both in the New Jersey and New York fire field.

New Equipment Inspected at Ventura—An inspection was made recently by Acting Fire Chief M. L. Ley and Walter Clayberg, deputy county fire warden, at Los Angeles, of the new fire department equipment at Ventura, Calif. The equipment includes new apparatus, hose, shovels for brush fires, and other apparatus.

A Few More Groups Taken at the Convention

Left: Chief and Mrs. C. M. Johnston of Knoxville, Tenn. Upper right: Chief Derra Turns "Bobby." Where he got the uniform no one knows, for a check-up of the Winnipeg Police Force showed that they were all wearing their own. At any rate his sudden appearance frequently gave convention visitors a start. You see him here in company with two of the Panama guests. Lower right: There a reason for the smile—Ra'ph J. Scott (extreme left) is the retiring president, as the smile would indicate. The other serious visaged gentlemen are (left to right): D. W. Brosnan, 1st Vice President; Joe Sullivan, President; J. J. Mulcahey, Recording Secretary; Peter Steinkellner, President Great Lakes Division; J. W. Stevens, Executive Secretary.

PROPOSED IMPROVEMENTS

Klamath Falls, Oregon—The proposed $75,000 bond issue to be voted upon at the November election for erection of a sub-station and purchase of additional fire equipment was lowered by $5,000 as budget committee believes $70,000 will be sufficient.

Chicago, Ill.—A petition for a $5,670,000 bond issue to be placed on the November ballot for the Fire Department has been filed with the Chairman of the Finance Committee.

Aberdeen, S. Dak.—The city commission has approved the plans submitted for the new fire station to be erected on the north side of the city.

Fair Lawn, N. J.—At a recent meeting of the Finance Committee of the Borough Council, the borough attorney was instructed to draw up an ordinance providing for the appropriation of $20,000 for fire apparatus.

Pasadena, Calif.—City to receive bids shortly for erection of fire station in Linda Vista Ave., according to reports.

Cumberland Hill, R. I.—Plans for organizing a fire district in the Cumberland Hill community will be considered by Cumberland Hill Improvement Association.

Stony Creek Mills, Penn.—Community Volunteer Fire Co. of Lower Alsace Township to purchase new fire apparatus, according to reports.

Leetonia, Columbiana Co., Ohio—At the November election city to vote on the $11,000 bond isue for erection of fire station. D. H. Schaeffer, Mayor. Eva S. G. Ashley, City Clerk.

Saratoga Springs, N. Y.—City Council voted to purchase a 1,000 gal. triple combination pumper and an 85 ft. aerial ladder truck, according to reports.

West Sayville, N. Y.—West Sayville Fire District voted in favor of erection of a fire station at cost of $60,000. William Colson, Chief of Fire Dept.

Eureka, Calif.—Formation of a fire protection district in Stumpville, a suburb of Eureka, was approved at a recent election by residents of this community. Plans voted upon include purchase of a chemical car and installation of Fire Dept.

Wheeling, W. Va.—Meeting to be called by fire station and fire alarm committee of the Chamber of Commerce to discuss the proposed installation of a fire alarm station, according to reports.

Poughkeepsie, N. Y.—Young America Hose Co. seeking new pumper, according to reports.

Junction City, Oregon—At recent city council meeting the erection of a new fire station was discussed, according to reports.

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10-1, 15, 29

Fire Fighters Featured in Radio Program

One of the features of a cooperative manufacturer-distributor advertising campaign just started by the Johns-Manville Corporation is a radio program staged in a fire engine house. "Smoky Dan" a veteran fire chief is the principal character. "Smoky Dan" and his company of Johns-Manville Fire-Fighters who entertain their listeners with fire-fighting love, music, song and comedy, also re-enact vivid scenes in the life work of big-hearted "Smoky Dan," who though grown old in fire-fighting, is still full enough of pep to put on a show that is gripping from start to finish. This program is broadcast every Saturday evening at eight thirty, New York time, over the Columbia network of stations from the Atlantic to the Pacific. The first was on September 27th.

This radio program is a part of a special drive intended to promote the idea of re-roofing with fire-proof shingles.

CONVENTION DATES

Oct. 7-9—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLANIA. 51st Annual Convention, Hotel Americus, Allentown, Pa. Secretary, Charles E. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 8-9—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. 2nd Annual Convention, Sheboygan, Wis. Secretary, Chief Arthur J. Rahn, Fire Department, Two Rivers, Mich.

Oct. 15—FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY. Regular meeting and Mayors' Night. Fire Headquarters, Mt. Kisco, N. Y. Secretary-Treasurer, E. Riviere, Fire Headquarters, Larchmont, N. Y.

Oct. 21-23—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 49th Annual Convention (2d in year), Scottsbluff, Neb. Secretary-Treasurer, H. A. Webbert, Kearney, Neb.

Oct. 21-23—RAILROAD FIRE PROTECTION ASSOCIATION. 17th Annual Convention, St. Louis, Mo., Secretary-Treasurer, R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

November—SONOMA COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Petaluma, Cal.

May 11-16, 1931—NATIONAL FIRE PROTECTION ASSOCIATION. 35th Annual Meeting, Toronto, Ont., Can. Managing Director, Franklin H. Wentworth, 60 Batterymarch St., Boston, Mass.

May 21, 1931—IOWA STATE FIRE CHIEFS' ASSOCIATION. Annual Convention, Ames, Iowa. Secretary-Treasurer, Chief L. R. Morris, Ames, Ia.

Illinois Firemen Hold Convention

Albert Hasse, president of the Illinois Firemen's Association, presided at the forty-third annual convention held in Peru, Ill. The address of welcome was made by Hon. E. N. Woodruff, mayor of Peoria. To this President Hassee responded.

Sidney Firestone, Manager of the Industrial Naptha Sales of the Anderson-Prichard Oil Corporation presented a paper on "Fire Hazard of Cleaning Solvents." A paper on "Fire Protection and Prevention in Institutions was presented by Harry P. Nacey, President, Illinois Fire Prevention Association, Chicago. Simon Kellerman, 3rd, city attorney of Edwardsville spoke on "Legal Problems as Affecting the Fireman." Ira G. Hoagland, Secretary, National Automatic Sprinkler Association, New York City, gave a talk on "Automatic Water Control of Airplane Hangar Fires." The talk was illustrated by motion pictures.

The memorial services took place on Tuesday evening.

On Wednesday morning, there was a paper by an engineer of the National Board of Fire Underwriters on "Ladder Work and Hose Streams." Alex. Van Pragg, Commissioner of Public Health and Safety, Decatur, spoke on "What Has the Illinois Firemen's Association Done and What Is It Doing for Firemen of Illinois?" It was discussed by several members present.

In the afternoon there was a discussion on the short fire school course, led by Asst. Chief Roy W. Alsip of Champaign. Hon. S. L. Legreid, fire marshal of Illinois spoke on "Gasoline, Its Use, Etc." The first aid team of the Western United Gas & Electric Company under the direction of Chief Albert Herring, Murphysboro, who trained them, presented a first aid demonstration.

At the banquet in the evening, J. B. Elder, Deputy State Fire Marshal spoke on "Inspections."

The new officers of the association are Fred P. Haderlein, Carlyle, President; Joe Valentine, Rock Island, Vice-President; Roy W. Alsip, Champaign, Secretary; Simon Kellerman, Jr., Edwardsville, Treasurer; Elmer W. Weidler, Historian, Mt. Olive.

The executive board consists of Albert Hasse, Peru; S. T. Lowry, Decatur; A. Pasavento, Joliet; M. J. Myers, Mt. Pulaski; George Knol, Cicero; Louis Reich, Riverdale; Frank J. Ruthowski, Steger, and Albert Herring, Murphysboro.

To Start on Chicago Fire Patrol Building.—Work will start soon on a fire patrol building in Chicago to cost $75,000. It will be two stories high and will be constructed of face brick. The dormitory will accommodate sixteen men. The Chicago fire patrol was organized in 1874.

Eighteen Promoted in N. Y. Department.—Eighteen men were promoted in the New York Fire Department, two captains were made battalion chiefs, four lieutenants were advanced to captain, nine firemen promoted to lieutenants and two were made firemen pilots. The nine firemen made lieutenants are World War veterans.

This Country is Short Another Brewery

Twenty pieces of fire apparatus were rushed to Staten Island to help the fire department in that borough to fight a fire that raged for three hours in a brewery at Stapleton. Through the good work of the manager of the plant, the firemen were saved the necessity of suffering from ammonia fumes. He braved the flames in order to close the ammonia valve.

FALSE ALARMS

THE PROOF

"What with electric generators on fire apparatus, and electric door openers at the stations and what not, it seems that before long we shall be able to get nearly everything we want by just touching a button."

"Oh yeh," remarked another fireman. "You'll never be able to get anything that way."

"And why not?"

"Because you don't seem to like to touch buttons. There are two missing from your shirt now."

The unemployment situation isn't getting any better. Think of all the public officials who have lost their jobs recently.

CLEVER DOG

The fish story is all too common, but here is a dog story probably written by the one who has been telling of the big ones that got away.

In discussing dogs, one remarked, "Smith had a most intelligent retriever. One night Smith's house caught fire. All was instant confusion. Old Smith and his wife went for the children and rushed them out in quick order. But one of the youngsters was left behind. The dog rushed in and reappeared with the missing child. Every one was saved, but again the dog went through the flames. Presently the animal came out, scorched and burned with—what do you think?"

"Give up," said the eager listeners.

"With the fire insurance policy wrapped in a damp towel, gentlemen."

There is nothing in the world which will so quickly humble an individual as a custard pie properly placed.

THE REASON

It's great how medical science has advanced. If one has a suspicion of rheumatism there is always some one to suggest that the trouble may have been started because of teeth infections.

When Jim walked into station, the desk man asked:

"What makes you limp?"

"Bum leg."

"That's bad teeth," suggested the desk man.

"I know it."

"Why don't you have 'em pulled?"

"I can't find the dog."

"What did your wife find when she went through your pockets last night?"

"She found what explorers usually find—enough material for a lecture."

SELF FIRST

The city was showing its new station to the public. Previous to the day that the station was opened, the Chief called all of the men together who were to serve as guides and stressed the importance of proper decorum, and that they were to act as gentlemen.

One fireman after showing a party of visitors about the first floor remarked:

"You'll have to wait. I can't show you around up stairs yet. The chief's there. Smoking ain't allowed."

"But we're not smoking," said one of the party.

"No, but I am."

To give a party on the qt, don't get more than one qt.

WORTH TRYING

At one of the conventions there was considerable discussion on the question of what steps should be taken to reduce the number of street accidents.

We would suggest long, quick ones.

DEAD OR ALIVE

Another fire truck had been run up on the sidewalk and into a brick wall in order to avoid hitting a man who thought he could beat the apparatus. Of course when the accident was reported, the Chief had many things to say, many of which could only be transmitted verbally. The police commissioner was on hand to see if he could help.

"Don't you think, Chief," he said, "that jaywalkers should be arrested?"

"Yes, Commissioner, if your men catch them alive."

PERFECT SYSTEM

It takes all kinds of men to make up a fire company. One had a hobby of studying the weather and he was working out a system of his own.

"How are you coming on with your new system of weather prediction?" he was asked.

"Well, I can always get the kind of weather, all right, but I haven't quite succeeded in hitting the dates exactly."

An optimist is a governor who goes to a Hoover drought conference carrying an umbrella.

A few words mumbled over your head and you're married. A few more mumbled in your sleep and you're divorced.

ANCESTRY

Friends of the father had called, but the head of the house was on night duty with the engine company. They were very much interested in the baby. One asked:

"Tell me truly, does the baby really take after his father?"

"Yes, indeed. Why, when we took the darling's bottle away, he tried to creep down the cellar stairs."

A garage fire in Brooklyn destroyed more than one hundred autos. Many families lost everything they had.

FACING FACTS

The fire school instructor was stressing the difference between theory and the need for its practical application.

"Look at the farmer, for example," he said. "A theoretical farmer is one that insists on trying to make a living off the farm, and a practical one just faces the inevitable and turns the place over to summer boarders."

THE INNOCENT CAUSE
JULY 3
I'LL CUT OUT THIS 3rd of JULY RACKET ONCE AND FOR ALL !
IT OUGHT NOT TO ALARM ME, BUT THIS ISN'T THE FIRST TIME
?

—Drawing by "Art" Espey.

And Now We'll Tell You a True, True Bedtime Story

Many, many hours ago there lived in a New England city, a strong, good looking, kind hearted fire department lieutenant and his loving wife and their little baby. Their home was fitted with a fire alarm tapper which sounded every time an alarm was turned in. On the Fourth of July the alarms came in incessantly, because of little boys who played pranks. So, this year the thoughtful wife originated a plan to stop the noise so that baby could sleep. On the eve of the holiday she snipped the wires on their private tapper. And as a result four fire stations and a half dozen private tappers were dead as far as fire alarm signals were concerned. Every one was happy but the wire chief. What he said is not for little children to hear.

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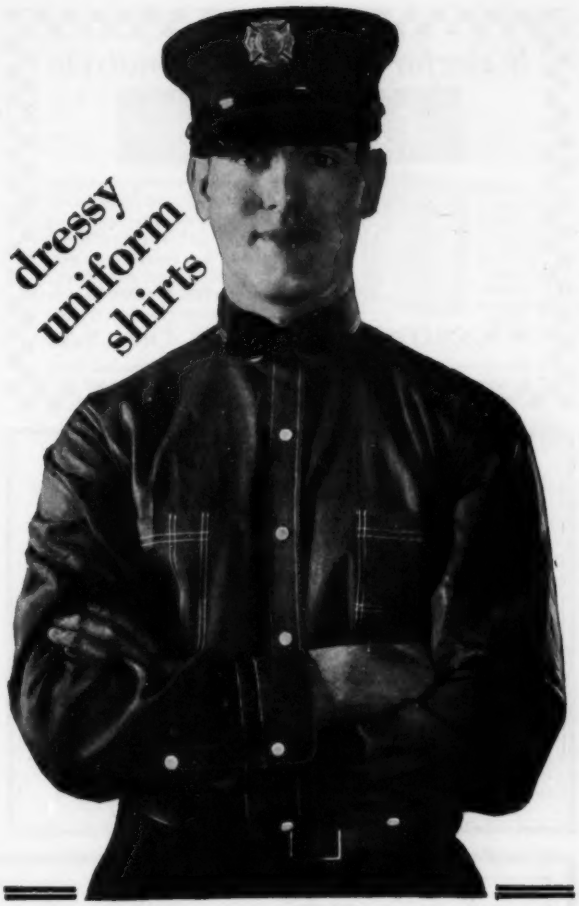

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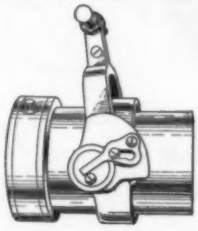

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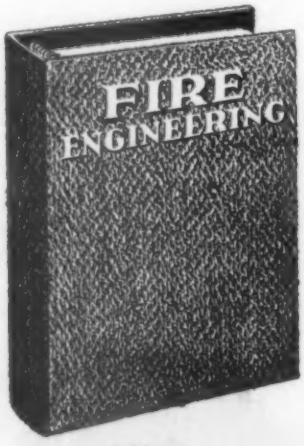

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The Round Table

(*Continued from page* 850)

Owen C. Dunn, Chief, St. Paul, Minn.: Theatres, dance halls, lecture rooms, etc., are inspected daily and when a gathering is held in them firemen and fire inspectors are detailed.

Considerable benefit is to be derived from inspection work. On numerous occasions it has been necessary to order people from aisles of theatres. So far we have never had a disastrous fire in a theatre or other place of public assembly.

In one instance, while a performance was going on in our auditorium, one of the inspectors discovered a fire which, in a few moments more, might have been quite serious.

Eight men are detailed to the automobile show each year. They have extinguished small blazes many times while the show was in progress. If they had not been there some of these fires might have resulted in a serious condition.

F. P. Moore, Chief, Newton, Mass.: Men are sent to schools and churches when large crowds are assembled. They are also assigned to basket ball courts. When there are special matinees for children at the picture house, more attention is given to the place to avoid fires. We try to educate children to act the same in the event of a fire breaking out as they do at their fire drills. Children are more receptive to the things told them than adults.

Hugh F. Morris, Chief, San Mateo, Calif.: Firemen are detailed to all large public gatherings or assemblies to safeguard the public in the event of fire or emergencies of any kind.

It has been the experience of the men detailed to such gatherings on their arrival to find in some instances exit doors locked, over-crowding, and people sitting in the aisles. Things of this sort are quickly remedied on the arrival of the firemen.

Gus Rehm, Chief, Mobile, Ala.: At theatres we insist that green lights be furnished at exits to enable people to know just where the exits are. In large establishments sprinkler systems are used. Theatres have 2½-gallon extinguishers and have fire hose available for use in case of fire. On special occasions two firemen are placed on duty behind the stage. Regular monthly inspections are carried on at all times. Lecture halls and dance halls are inspected once a year, but men are assigned for duty on certain occasions.

We have had no fires here in any of the places mentioned since the Mobile theatre fire of 1907.

L. T. Cothran, Chief, Spartansburg, S. C.: Uniformed firemen are assigned to theatres and other places of assembly. They have fire extinguishers ready for use. At theatres the men are required to stay in the front lobby so that the people will know that firemen are on duty. The men are instructed just what to do in case of fire. That is, how to handle the crowd. No smoking is permitted behind the stage in theatres.

Five Firemen Overcome at New York City Fire

Five firemen were overcome while fighting a blaze in the downtown section of New York City. The photograph shows first aid treatment given two firemen with the aid of inhalators.

Roy Elliott, Chief, Medford, Ore.: No smoking is permitted in theatres, lecture halls, etc. Constant inspections are made to prevent fires. I have always found that those in charge of such places are willing to co-operate with the department.

* * *

ANSWERS TO PREVIOUS QUESTIONS

The following discussions have been received in reply to a query on the value of photographs in obtaining arson convictions, and whether or not the pictures were taken by the department:

H. E. Nissen, Chief, Winston-Salem, N. C.: Thus far we have never taken photographs of hazards and violations but have taken pictures of suspicious fire settings for possible use as evidence in court proceedings.

Our pictures have been taken by commercial photographers in the past. However, in future this work will be done by the Identification Bureau of the Police Department as part of the work of our Arson Squad.

We have found the taking of pictures to be of great value.

Paul J. Dolan, Chief, Cedar Rapids, Ia.: We take pictures of hazards, violations and fires of a suspicious nature. These pictures are taken by commercial photographers.

The value of this work is obvious, for it makes possible a perfect record of the state of affairs about the scene of a fire. Ordinarily persons who study these pictures discover conditions that do not appear on the surface. In fire prevention work and clean-up campaigns the pictures are useful to show to the people a positive proof of the necessity of guarding against fires at all times.

W. R. Williams, Chief, Fresno, Calif.: We take pictures of hazardous conditions and where such conditions are in violation of the ordinances they are used to submit evidence before the municipal court. Photos are also taken of suspicious fires immediately and these photographs are filed with the District Attorney's office in case a complaint is requested.

Pictures are also taken for publicity purposes. Quite frequently this department takes pictures for the purpose of arousing public interest in our fire prevention campaigns.

Commercial photographers take most of the photos, an appropriation being made in our yearly budget for this work. Such pictures, when taken, are handled by the Fire Prevention Bureau members.

It is impossible to estimate the value of such work. It has a tremendous bearing as evidence when submitted in court and pictures in the paper have a wonderful effect on the public. This is evidenced by the fact that immediately after such pictures appear in the newspapers numerous people will stop you on the street and talk to you about fire department activities.

Owen Dunn, Chief, St. Paul, Minn.: Our Division of Fire Prevention takes pictures of all suspicious fires and bad hazards. These photos are taken by commercial photographers, and also by members of the department.

Pictures taken of arson cases are very valuable for using as evidence, as they show the real condition of the premises at the time of the fire. Pictures of suspicious fires are presented to the County Attorney, along with all the other information in order that he may determine if the case should be placed before the Grand Jury.

Clyde H. Pritchard, Chief, Jackson, Mich.: Photos of hazards, violations, suspicious fires, etc., are taken both by members of the department and commercial photographers. However, we are contemplating having a machine of our own for this work. I believe such work is an excellent thing, not alone for arson, but in getting rid of fire hazards.

* * *

The following replies have been received in answer to a question on whether or not the fire department has an insurance policy to compensate the men for injuries received in line of duty:

L. E. Heim, Chief, Pennywood, Mont.: We have no accident insurance covering our firemen, but do have a relief fund that takes care of men who are hurt. We pay the hospital and doctor bills. As soon as a man is able to work he does not receive any compensation.

Blanket insurance should be provided for all firemen.

That is the thing we are working for in this state. Our next Legislature will have a bill asking that all cities take out blanket insurance policies for firemen.

D. Hearn, Chief, Delmar, Md.: We have insurance to compensate firemen for injuries sustained while on duty. Every fire company should have insurance to protect their men.

S. W. Hancock, Fire Inspector, Nobleboro, Me.: We do not have insurance for the protection of firemen in case of injuries, being a volunteer department, for we have never had a case of that kind to contend with. Such insurance certainly is a good thing where a regular paid department is maintained.

Wm. Schaffarzick, Chief, White Sulphur Springs, Mont.: We have a firemen's disability fund to take care of injuries or illness caused in the line of duty.

A. M. Hoffman, Chief, Libby, Mont.: The city carries a policy to protect firemen in the event of injuries. This costs $164 a year for 25 men. A man receives $25 a week if he is injured and his family receives $1,000 if he is killed.

E. C. Enderle, Chief, Glen Burnie, Md.: Our department is volunteer, and the men are insured against accident or death, in addition to an insurance feature carried by the Maryland State Firemen's Assn., of which we are a member. The amount paid by the State body is not sufficient to reimburse a member for time lost should he meet with an accident which very often is unpreventable. The state should either carry compensation insurance direct or through the agency of the State Association, and the amount should be high enough to compensate men of the skilled mechanic class.

V. I. Patnode, Chief, Bristol, Vt.: We do not carry insurance to cover firemen in the event of being injured while on duty. Thus far none of our men have been injured. However, it certainly is a very good thing and is something every department should have.

Reducing Property Damage

(*Continued from page* 848)

to absorb all loose water and dampness. After this has been absorbed, the saw-dust should be swept up and removed from the building. If there happens to be a little water still dripping from the ceiling, it is wise to leave some saw-dust on the floor to take care of this.

The covers that have been spread over the contents should be taken up and removed from the premises, that is, of course, if there is no water dripping. After the premises have been cleaned up as much as possible, it is the duty then of the salvage department to arrange the furniture, stock, etc., in as neat and tidy a condition as circumstances will permit. Any machinery which has become wet must be immediately wiped off and oiled to prevent it from becoming rusty.

Removing Water From a Cellar

All damaged stock or material which has been removed from the building should be brought back and placed into a neat pile within the building, after making sure that there is no fire remaining anywhere. When a large amount of water has been used to extinguish a fire, especially when the fire originates in the cellar, it is the duty of the salvage department to remove the water as soon as possible—that is, of course, if the cellar is not equipped with drains. This can be acomplished very effectively by making use of the company's pumper, simply placing the suction sleeve at the lowest point of the cellar and pumping it dry. This will eliminate the danger of the foundation being damaged or the water seeping through into an adjoining cellar and damaging any stock that may be stored there.

In small cities where there are more than one or two companies, and each company is equipped to perform efficient salvage operations, you can always find a higher degree of efficiency and a smaller fire waste than in the departments that do not operate in a like manner.

Salvage Work at a Frame Apartment Fire

As an example of the fine work that can be accomplished through efficient salvage operations, allow me to cite the following. On March 23, 1930, an alarm of fire was received from an exclusive neighborhood, the fire originating in the cock-loft of a three-story frame apartment house. Upon their arrival, the men of the Salvage Corps immediately went to work on the floor beneath the fire, each man carrying two covers into the building; they at once removed the rug and spread a cover on the floor of this room which was immediately beneath the fire. As it happened, this was a bed-room; the bed was picked up and placed on top of the cover, and the rug, pictures, chairs, draperies, etc., were placed on the bed; the bureau and wardrobe, etc., were then pushed close to the bed and a cover immediately spread over all.

The other men of the Salvage Company proceeded to do likewise in the adjoining rooms. The occupant of this apartment became very indignant and excited at seeing her valuables and furniture handled in such a manner, fearing that everything would be ruined, if not by fire and water, by the way we were handling it. I tried to assure her that everything would be well taken care of, but to no avail, and it became necessary to have her removed from the premises, due to the threatening remarks she made.

To the best of my recollection there were four 2½-inch lines used to extinguish this fire, so you can readily see that a considerable amount of water was discharged within the building. After the fire was extinguished, the salvage men went to work immediately to clean up the building, rearrange the furniture, etc., saw-dust was spread to take up the loose water and dampness from the hardwood floors. The room directly beneath the fire was in a terrible condition, due to the ceiling falling and scattering lath, plaster and other debris all over the furniture, which, however, was safely protected with salvage covers, and when the covers were removed the furniture was found to be in excellent condition.

The occupant who had to be removed from the premises was very high in her praise for the service we had rendered and most humbly begged pardon for the manner in which she had acted, as there was no loss whatever to her valuables or furniture. No water whatever reached the first floor. This goes to show what a few salvage covers meant on this occasion.

Fire in a Mercantile Establishment

On January 14, 1929, an alarm of fire was received from the high value mercantile district. The fire originated in the cellar of a very expensive jewelry store, and extended up an open elevator shaft to the rear of the first and second floors. The Salvage Corps' men immediately laid covers on the floor; removed all stock from the shelving and placed the same in show cases which were then covered. There were eight alarms sounded for this fire, at which the high-pressure companies and water-towers were placed in service. At times there was more than a foot of water on the first floor, and to prevent any loose jewelry from being washed out of the building a folded cover was placed at the front door-way. On viewing this store after the fire it appeared as though everything on the inside would be a total loss, as the metal ceiling had been torn down, and debris of all kind was on top of the covered show-cases. After the salvage men had completed their tasks of cleaning up, removing the covers, etc., it was found that all of the delicate watches, clocks and fine jewelry in the cases that were covered up, were perfectly dry and not damaged by fire or water in any way.

Preventing Damage in a Printing Establishment

Another instance of property salvage occurred at a fire in a printing establishment. There were two linotype machines close to a window, which was right in the path of the high-pressure lines. Salvage covers were spread over these machines, which were valued at $10,000 each. After the fire was extinguished and everything cleaned up, these two machines, along with many others that had been covered up, were found to be in good condition and no loss whatever was claimed.

These incidents, I feel sure, will illustrate just what salvage covers, when properly spread, can accomplish toward reducing the fire waste.

In all cities, small or large, it is the duty of the officer making a fire prevention inspection to note the conditions which exist, especially in cellars, as to the house-keeping conditions and whether or not the premises are equipped with drains. If a cellar is not equipped with a drain, he should recommend the installation of one, to be located at the lowest point of the cellar, and see that it is never covered or blocked. This often proves a great help in fighting fires, as the water will drain off very rapidly, thereby protecting the adjoining cellars and foundations.

(Excerpts from a paper read before the Annual Short Course for Firemen held at the University of Maryland, College Park, Md.)

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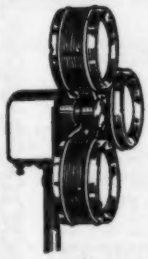

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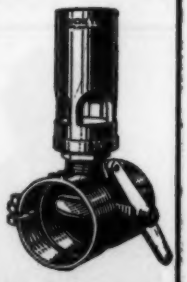

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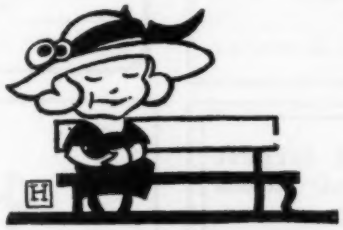

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Clay, Inc., John H.	866
Combination Ladder Company	866
Darling Valve & Mfg. Co.	842
Decot Machine Works	872
Eddy Valve Co.	870
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Everson-Ross Co.	869
Fabric Fire Hose Co.	841
Fulton Bag & Cotton Mills,	*Inside Back Cover*
Hedberg, J. N.	872
Hewitt Gutta-Percha Rubber Co.	872
Information for Buyers	**871**
Lally Fire Appliance Co.	870
Maxim Motor Co.	870
National Standard Threadless Coupling Corp.	866
P-B Products Co., Inc.	870
Rensselaer Valve Co.	872
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